November 2001
Volume 69 No 11

Amateur Radio

The Great Australian Science Show:
IT'S A GASS!

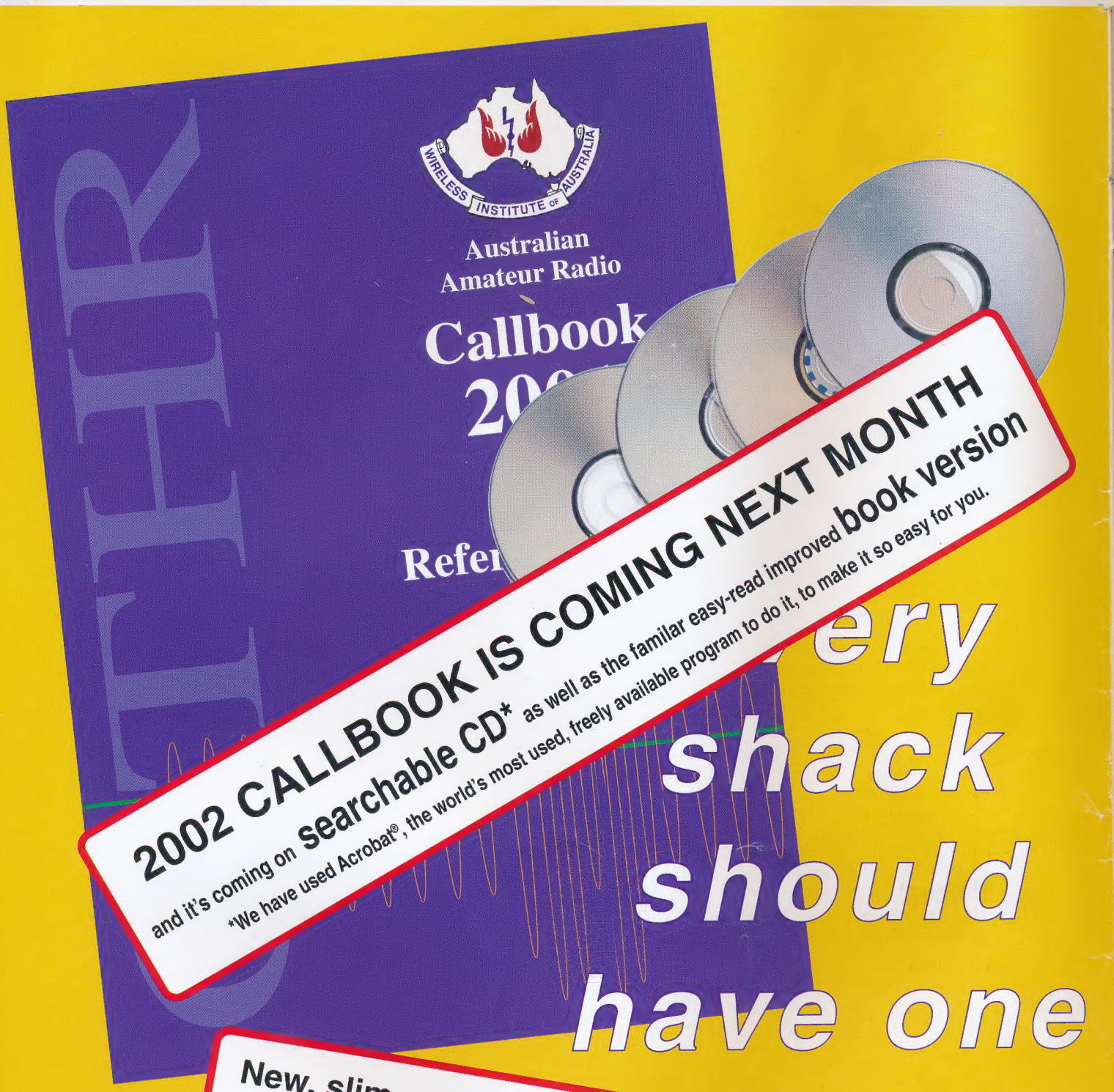
GMDSS:
Safety Compromised at the Peril of Seafarers?

St. Mary's Island, AS096
IOTA — Islands on the Air

- Use of ferrite cores in RF broadband transformers
- The DL6WU Yagi: a VHFers Classic
- A meterless capacity meter

Internet Repeater Linking

Home brewing a helix, VK5ZAI style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Our cover this month

The arrival of digital television has resulted in many changes being made to transmission facilities.

The cover shows a Mil 8 helicopter lifting a new UHF antenna onto the TxAustralia site on Mt Dandenong in Victoria.

(Photo courtesy of TxAustralia)

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Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

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Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

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Editorial

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Is this Amateur Radio?

Greetings. While checking my email account the other week, I was surprised to find I was averaging 2.5 h connect time each day and that is 90% +AR. Luckily there are other sides to Amateur radio. I was able to spend a day watching the Classic Adelaide cars go by as I helped WICEN with the scoring communications net. I had a Stage Start position so the cars waited patiently while I checked them out. I also ran a JOTA station for the Salisbury East Guides with Steve VK5AIM. We did not have a large rollup but there were enough Guides to make it worth while. Conditions were good. HF nearly as good as VHF FM and the girls got to talk to several different groups.

I have also been involved with the SA VHF Group/Elizabeth Amateur Radio Club in their efforts to make Amateur Radio more visible. I said I would take the ideas members put up and set them out in a folded sheet of A4 booklet. This is to be made available in the local DS store, the libraries and schools. The first version said all the usual things but it was still lacking a good interest catching theme. I am still unfortunately not clear what are the best aspects of Amateur Radio to present to today's retirees and electronically minded teenagers. Do we highlight communications and black boxes? Do we push an experimental aspect with a build/assemble thrust? Do we show that amateurs are a group of "help each other" people with a range of interests broadly covering communications, electronics and with an experimental approach?

When I read Q-News or other Club electronic newsletters, I get the impression some clubs have got things right and they do have a steady string of activities that attract people. They have developed a method of keeping people after they make their first appear at the meeting room door. We never should let a prospective new member stand embarrassed at the meeting room door being unintentionally ignored. So we do need to approach them, introduce our selves find out what motivated them to come and then know who is able and willing to answer their questions and who to introduce them to, to explain what the club is about.

My experimenting is still in areas I would not have considered, at all, a few years ago. I was not interested in VHF; I did not have 2 m gear. I thought SMT was too difficult to even contemplate. Now I have built a transverter which works I have several VHF and UHF Tcvrs and I get a great satisfaction from operating something I have made and using frequencies where art and science merge!

The highlight of the month was being able to go to Miningie, SA and present Eric Jamieson VK5LP with his 1999 Higginbotham Award. Eric is confined to a wheel chair and the visit also allowed UHF equipment at the 50 foot level on his tower to be checked.

The message for the month is make your club friendly to visitors, do something to advertise Amateur radio and if possible "Help an old lady across the road"

New WIA members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of SEPTEMBER 2001

L11289	MR D GEORGIEVSKI	VK3DOU	MR J W CONNELLY
L30979	MR S OUWERKERK	VK3FJP	MR M WESTWOOD
L30980	MR P MCPHEE	VK3KRB	MR R BROOMHEAD
L31572	MR P J PHILP	VK3TCR	MR B GREGORY
VK2DBD	MR H KRISENTHAL	VK3TPJ	MR R HAMMENT
VK2ERF	MR R FOX	VK4MHQ	MR D BAUER
VK2PCA	MAJOR R A ADAMS	VK7JAB	MR A E BRAIN
VK3AHD	MR P MCPHEE	VK7LUV	MS S M BRAIN
VK3AUD	MS S A THOMPSON		

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Political activities

The Productivity Commission Review of the Radio Communications Act

I alerted everyone to the forthcoming review of the Radio Communications Act being conducted by the Productivity Commission (PC) in my last set of notes. Since then a number of events have occurred. Firstly I met informally with the two commissioners tasked with conducting the review. This was a very useful meeting the result of which was the confirmation that we needed to make a written submission to the review team as well as attend the public hearings that have been scheduled for all major Australian cities. To ensure that the best interests of the WIA were met I have written a submission detailing the WIA response to the issues being examined by the Productivity Commission. This document has been widely circulated amongst the Divisions. The results of these reviews have been incorporated into the final document that was submitted to the PC in mid October. A copy of the submission will be available on the WIA web page.

This submission will be the basis on which a number of us attend the various public hearings. I will be representing the WIA position at the hearing in Canberra on 29 October. This will not be the end of the process. The nature of the review process will allow us to make further submissions after the public hearings have completed. For this reason it is important that those of us who can, try and attend these hearings to hear what other groups have to say. Some of their views may be damaging to the WIA and it is imperative that we are in a position to rebut them before the end of the review.

The WIA, its structure and policies

The WIA, like most organisations is always subject to pressure from both within and without. We are all aware of the various open discussions that have been held over the WIA and its structure over many years dating back to the Arnold report and even before. Many of you will have heard rumours about the fact that this discussion has been continuing with the council and the executive. This is only natural when a group of individuals get together. Over the last few weeks I have been pleased to see considerable discussion of a wide variety of issues that impact the WIA. These have ranged from whether the Productivity Commission paper should contain references to the place of type approved equipment and class licences in the conditions of the amateur licence, through to policy issues on the issue of access to membership records.

By now many of you will be aware of one of these issue in relation to the provision of email aliases on the WIA web page. For me this has proved to be a very interesting experience on Federal WIA politics. There has been a wide range of responses to the service. These have ranged from:

- Don't do it - we provide too much already to non members,

through to

- It's a great idea and will serve to show that the WIA represents all amateurs and therefore attract new members.

The truth is probably somewhere between these two extremes.

Due to pressure I have agreed to suspend the service until a number of issues are resolved. Currently the biggest impediment to the service is being able to validate WIA membership. At the moment the WIA Federal office cannot use the membership lists to perform this task without the express permission of some Divisions. This is a chance for you to make an impact. If you have a view on this issue please either tell me directly or lobby your local club and Division. The service is there - you just need to tell us how you want it run.

Financial Issues

David Pilley and June Fox have been working hard towards revising the budget based on factors such as the current costs of AR, current membership numbers, and various international contributions that we are required to make to groups such as IARU. This calculation is important to the issue of setting fees for the next financial year. The setting of is of course a very emotive issue. However there are a number of factors which are outside of our direct control which have the overall affect of driving up our costs at a time when membership and therefore income is falling. Whilst the executive can do all it can to address the issue of cutting costs there are some that we simply have to accept. The issue of membership is though something that all of us can help with.

New Draft Spectrum Plan

A new draft Spectrum Plan has been issued by the ACA. The plan is available through the ACA web site. The WIA team is already looking at this draft to determine what impact it will have upon amateur operation in Australia. I urge to you visit the ACA web site to obtain a copy of the draft plan and spend time with your local club and Division discussing the draft. It is important that we ensure that amateur interests are best represented. The Spectrum Plan is only reviewed infrequently. If we are not heard during the current cycle of revision of the plan we will miss out for a number of years until the next review is scheduled.

Membership

Membership as always remains very much at the top of my priority list. I would like to thank all of you who have made thoughtful contributions as to how we can improve membership numbers. Keep up the good work and remember that by showing non-members the benefits and great spirit that we have in WIA we can persuade them of the benefits of joining.

Best wishes and 73s de Ernie Hocking VK1LK

ar

Use of ferrite cores in RF broadband transformers

Ron Saunders VK2WB

Depending on the requirements, transformers can be designed to provide dc isolation, impedance matching and specific current or voltage ratios. Transformers designed for power, broadband, pulse or impedance matching can often be used over a broad frequency spectrum. In many transformer designs, ferrites are used as the core material, particularly for low power levels.

Theory of Operation

Figure 1 shows a typical performance curve of insertion loss as a function of frequency for a broadband transformer. The bandwidth is the frequency difference between f_2 and f_1 or between f'_1 and f'_2 and is a function of the specified insertion loss and the transformer roll-off characteristics. It can be seen that the bandwidth is narrower for transformers with steep roll-off (f'_1-f'_2) than for those with more gradual roll-off. Three frequency regions are identified. The cutoff frequencies (f_1 and f_2) are determined by the requirements of the individual design, and f_1 could be anywhere between 300 Hz and 10 MHz. Bandwidths can also vary from a few kHz to a hundred or more MHz. Typically the design will specify insertion loss for the mid frequency range and the 3dB loss (relative to midband loss) at the cut-off frequencies f_1 and f_2.

Figure 2 is a schematic showing the equivalent circuit of a transformer followed by an ideal (lossless) transformer. The circuit elements show combined (lumped) primary and secondary equivalents of a practical transformer. In the low frequency region the roll-off is due to a lowering of the shunt impedance, which reduces as the frequency is reduced. This impedance is mainly a function of the primary reactance X_{Lp} with a small contribution due to shunt loss resistance R_p if the ferrite material is chosen correctly. The insertion loss for the mid-band region is due to the winding resistance R_c. The high frequency region characteristics are mainly a function of the leakage inductance L_l or the shunt capactiance C_d. In a low impedance circuit the high frequency region loss is more due to L_l and in a high impedance circuit C_d dominates.

From the above explanation it can be seen that we should select a ferrite material which specifies a broadband coverage suitable for our needs and yields the highest inductance per turn (A_L) at the low frequency cutoff f_1. This will give us the least number of turns which produces the required shunt inductance. The low number of turns then produce low insertion loss at mid band and also low winding parasitics needed for good high frequency response at f_2.

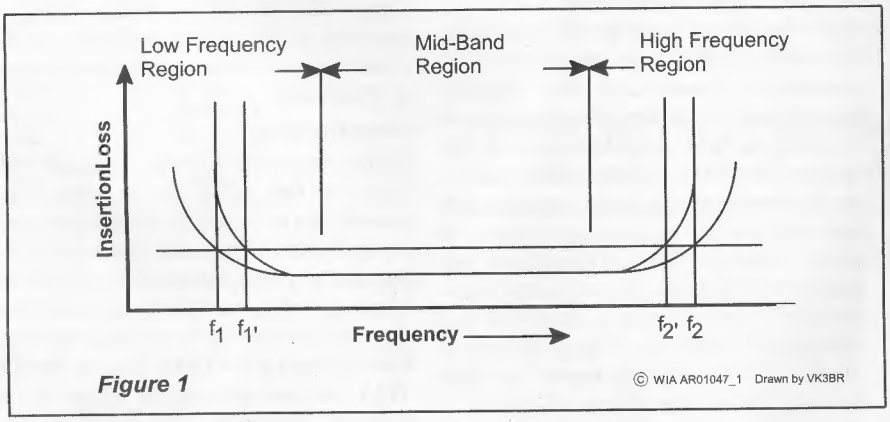

Figure 1. Typical characteristic curve of insertion loss vs frequency for a broadband transformer

Practical Considerations

At frequencies above 1 MHz it is important to consider the complex magnetic parameters of the core material, rather than just the simple core constants, such as A_L. Most applications in amateur radio where wideband transformers are used are at relatively low impedances, and the small number of turns means that the concept of minimising the R_{dc}/L value is usually no longer a problem. The design then becomes focused on the core shape and material necessary to achieve the required shunt impedance at f_1 and also reducing leakage inductance to achieve f_2.

The toroidal core is a very effective shape for winding broadband RF transformers although the balun core can provide a wider bandwidth where required.

Ferrites with permeabilities (u) from 1000 to 5000 are made from manganese-zinc materials and are suitable for use where f_1 is below 1 MHz. Above this frequency it is best to use a nickel-zinc ferrite which has permeabilities ranging from 20 to 850. There are several different materials in each category. Material selection should be made by checking the manufacturers data to find one that specifies a broadband range to cover your requirements. Ref. 1.

Table 1 lists some typical ferrite material data that is required for making a choice.

All these materials are available as toroids and some are also available in balun form.

Material	43	61	67	72/73	77	J/75
Initial Permeability	850	125	40	2500	2000	5000
Resistivity (ohm-cm)	1*10^5	1*10^8	1*10^7	1*10^2	1*10^2	1*10^2
Curie Temp (deg C)	130	350	500	160	200	140
Broadband Circ. (MHz)	1 - 50	10 - 200	200 - 1000	0.2 - 15	0.5 - 30	1 - 15
Resonant Circ. (MHz)	0.01 - 1	0.2 - 10	10 - 80	0.001 - 1	0.001 - 2	0.001 - 1

Table 1

You will see that the high permeability materials have low volume resistivity (100 ohm-cm) and low resonant circuit characteristics. The low resistivity means that you must provide adequate insulation between the core and winding. A simple check with an ohm meter across opposite faces of an unknown core can often indicate whether it is a manganese-zinc or nickel zinc material. A low reading indicates it is a high permeability material. The Curie temperature is also of importance since it indicates the temperature at which the material loses its magnetic properties. Generally, if a ferrite core under continuous operation exceeds 75 deg.C it is running too hot, and should be replaced by a larger one and/or the wire size should be increased. You can see that any given material has a much lower resonant frequency range than when used in a broadband application. We should choose a material with a suitable broadband frequency range.

Having chosen a suitable material for our application we must then determine what primary inductance is required to provide sufficient inductive reactance (X_{Lp}) at f_1. As a "rule of thumb" the value of X_{Lp} should be at least 5 times the winding load impedance. Suppose that the load impedance is 50 ohms, then the winding should exhibit at least 250 ohms of inductive reactance at f_1. To calculate the turns for the winding we must know the A_L value of the chosen core. This value is specific to each core and takes into account the core shape/size and the ferrite material and is the inductance index for that particular core. It is expressed as nH/turn^2 or mH/1000 turns.

It should be noted that the permeability of ferrite material decreases as the frequency is increased and for this reason we must calculate the inductance required at f_1.

Table 2 shows a selection of small toroid cores with their size and A_L value.

Ferrite Toroid [size-matl]	Outside Dia. (inches)	Inside Dia. (inches)	Height (inches)	A_L +/- 20% (mH/1000t)
FT-37-43	0.375	0.187	0.125	375
FT-37-61	0.375	0.187	0.125	55
FT-50-43	0.500	0.281	0.188	470
FT-50-61	0.500	0.281	0.188	68

Table 2

Design Example

Let us assume we are designing a broadband transformer which is to match a 50 ohm load to a 450 ohm load over the 1.8 – 30 MHz range ($f_1 - f_2$). This could be a matching transformer used in a low level section of a multiband amateur hf transmitter or receiver, and would be considered a low impedance transformer.

From Table 1 we can see that 43 ferrite is suitable for broadband use between 1 and 50 MHz, so we will choose a toroid core made from 43 material. Since this is a low level transformer, we can choose a small size core as negligible power is involved. Table 2 gives the A_L values for some small toroid cores varying from 0.375" to 0.5" o.d. We will initially choose the FT-50-43 which has a nominal A_L value of 470. Taking tolerances into account this value could be anywhere from 376 to 564. Let us use the nominal value and see how the design works out.

Earlier, we said that we required the 50 ohm winding to have a minimum X_{Lp} of 250 ohms at 1.8 MHz. From the formula for inductive reactance (X_L = 2*À*f*L) we find the value for L works out to be 22uH. The formula which ties the A_L and L together is as follows:

N = 1000 * (L/A_L) where *L is required inductance in mH, N is number of turns*

Substituting L = 0.022 mH, nominal A_L = 470, we get N = 6.8 turns.

If we substitute A_L values for the upper (564) and lower (376) limits we get turns

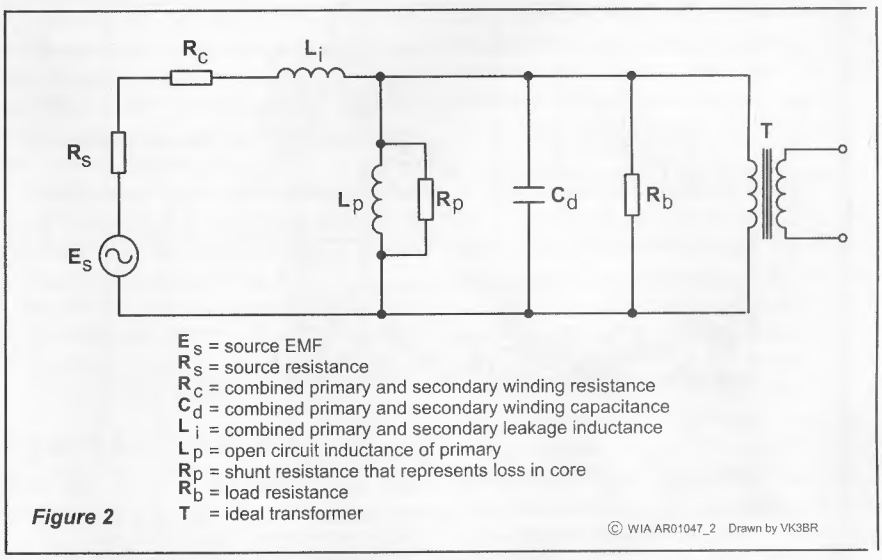

Figure 2. Simplified equivalent transformer circuit

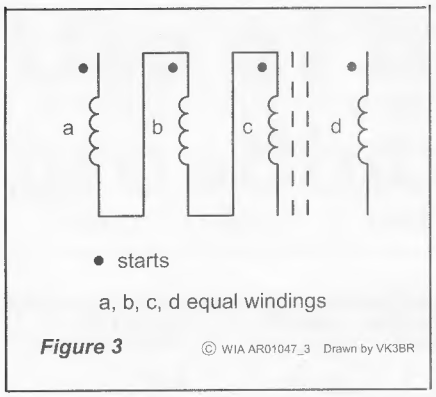

Figure 3. Quadrifilar winding

of 6.2 and 7.6 turns respectively. To ensure we have sufficient inductance at f_1 we will choose the higher number of turns i.e 7.6.

With toroid cores it is not possible to have fractional turns (a wire passing once through the core counts as 1 turn) and since we said that the *minimum* inductive reactance should be 5 times the load impedance we will make N = 8 turns. Our transformer has a 9:1 impedance ratio, so we must have a turns ratio of 3:1, so that the other winding should have 24 turns (3 *8). We now have defined the winding requirements and the toroid core to be used. Will we be able to fit the turns on the core? A total of 32 turns (8+24) must fit on the core. Quick calculation indicates that we could use 28awg wire, which would be suitable for a low level application. To keep leakage inductance and interwinding capacitance as low as possible the winding must fit into a single layer around the core, and special winding techniques should be used. This will raise f_2 as high as possible. The winding technique used is the *multi-filar* type of winding, which provides tight coupling between windings and at the same time achieves low leakage inductance which is the dominant factor in achieving a high f_2. The other advantage of this type of winding is that we can use several wires of equal length which can be wound on the core as a single bundle of wires. The wires are often twisted together 2-3 twists/cm to facilitate winding. The disadvantage is that we must identify the starts and finishes of each wire so that the individual windings can be *phased* correctly. Figure 3 shows the schematic circuit of a quadra-filar transformer with a 3:1 turns ratio.

	8 Turn Winding Induct. (uH)	Leakage Induct. (uH)	Interwinding Cap. (pF)	Calculated f_2 (MHz)
Simple winding	23	0.38	13	72
Quadra-filar winding	23	0.05	19	163

Table 3

Practical Transformers

Two transformers were constructed, one was a simple transformer and the other was a quadra-filar winding. Both transformers used FT-50-43 cores and had windings of 8 turns and 24 turns. The simple transformer had the low impedance winding (8 turns) wound over one end of the high impedance winding. Measurements of primary and leakage inductance and interwinding capacitance were made on each transformer and the results are shown in Table 3. The calculated value of f_2 is derived from the leakage inductance and interwinding capacitance values used in the normal fromula for calculating resonance $1/(2*\pi*\sqrt{(L*C)})$.

We can see that the quad winding has a much lower leakage inductance than the simple winding, but the interwinding capacitance is about 50% higher. This increase is due to the tighter coupling between primary and secondary in the quad winding, but the effect is swamped by the big reduction in the leakage inductance. The result is that the high frequency cutoff (f_2) is more than doubled. In practice, other circuit components could make this upper frequency unattainable and if necessary, it could be deliberately restricted to a lower frequency – say 30 MHz.

Conclusion

It has been shown that it is possible to make an RF broadband transformer with a high to low frequency cutoff ratio in excess of 30:1 by using simple calculations and winding techniques which are easily carried out by amateurs.

Reference

1. www.cyberelectric.net.au/~rjandusimports

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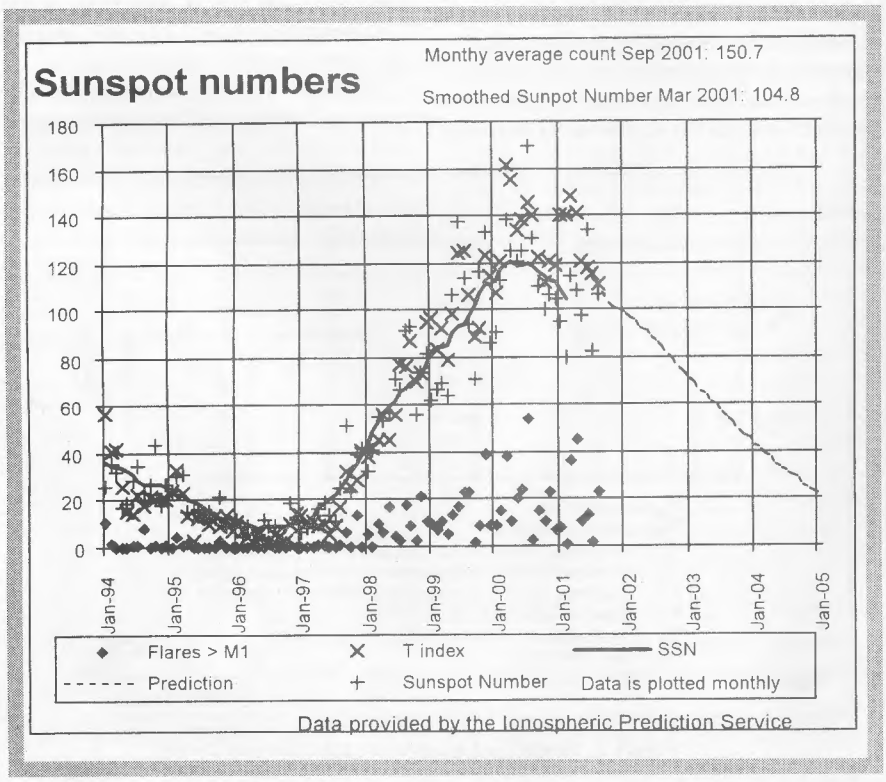

The DL6WU Yagi: a VHFers Classic

Ian Cowan, VK1BG.

Among the more serious VHF operators, the DL6WU yagi design is already well known and valued. However this antenna is not familiar to everyone. There has been occasional mention of it in this magazine, but not enough to answer the questions of those who may have heard of the DL6WU but do not know what it is. This article is intended to give some background on this classic DIY antenna to those not yet familiar with it.

Background

Gunther Hoch, DL6WU, spent decades on research and development of the universal antenna now commonly bearing his name. He used cut and try experimental techniques, sometimes with the aid of a large reflection free antenna test range owned by the German Post Office. The outcome of this labour was a set of graphical curves. These can be used to design a near optimum yagi antenna for any frequency using materials which happen to be on hand, and which matches to 50 ohm coax without the need for adjustment. The DL6WU antenna provided a significant boost to VHF/UHF operators using DIY antenna systems.

Literature

DL6WU has contributed to a number of amateur publications, but the first of his works to reach here appeared in 1977. In it he presented the basis of his recipe for yagi design, at a time before computer simulation was available. He presented his results using sets of curves from which element lengths can be accurately determined. Even now, an antenna built to his design will have performance very close to that attainable using much more sophisticated techniques.

A listing of relevant articles is given in the appendix.

References 5 and 6 give all that is really necessary for the design of a DL6WU yagi using manual techniques, with the latter being particularly valuable. The design of an antenna is a bit fiddly using the DL6WU curves, although if there is no better way, the results are certainly worth the time spent.

Along with a number of others, I have found the little one page item shown at reference 7 to be very useful. In this, David Tanner, VK3AUU, presents the outcome of some inspired work he did as an adult student at the GAIE. David took the DL6WU curves and developed an algorithm expressing them with very good accuracy. The algorithm can be readily plugged into a spreadsheet or written into a simple BASIC program. Either way, the antenna design exercise becomes automated with only a few seconds of computer time needed to produce the finished result.

The VK3AUU Algorithm

The VK3AUU algorithm reads as follows:

L = 0.5179 - 0.4328 d^0.2078 + (0.007344 + 0.1794d ^0.1996) e^-0.07586* N

where L = Length of Director N, d = director diameter, e = 2.718285

N is the number of the director being calculated, with director 1 being that closest to the driven element.

Note that in the formula above, the dimensions are expressed in wavelengths, so that before designing an antenna, the boom and element diameters must first be converted using the formula below:.

Dimension in wavelengths = xf / 299800, where x is the dimension to be converted, in millimetres, and f is the design frequency in MHz.

In the VK3AUU antenna, the length of the reflector is 1.12 times the length of director 1, and the driven element is 1.066 times the length of director 1.

Boom Correction

The VK3AUU algorithm gives the lengths of the directors which are mounted well clear of metallic mounting hardware. Where a metallic boom is used a boom correction factor must be used. This is an amount by which the reflector and directors must be lengthened to compensate for the metal in their vicinity. There has been a lot of work done in an effort to establish just what this factor should be. Gunther Hoch presents his estimate of boom correction in graphical form in Reference 6. Ian White, G3SEK has converted this curve to a simple algorithm, which may be stated as:

C = B(25.195B/W – 229B^2/W^2)

where C is the amount to be added to the length of each element, B is the boom diameter and W is the wavelength, all expressed in millimetres.

Guy Fletcher, VK2KU has refined this work still further, as set out in his excellent article at Reference 9. Guy has discovered that boom correction depends not just on the boom diameter and wavelength, but also on element diameter and the actual length of the element in question. The outcome of his work appears to be of special significance for the design of yagis for the 23 centimetre bands and above, and the reader contemplating the design of yagis for microwave work should see his article.

Calculation Techniques

As I said above the given formulae are conveniently handled using a PC. These days spreadsheet programs are the way to go for those familiar with them, and I know that Ron, VK3AFW is one of those who uses this technique to very good effect. Not being a spreadsheet man, I went the BASICA route many years ago using my then trusty XT clone PC, and prepared a program, somewhat modified over the years since, which is a direct conversion of the VK3AUU and G3SEK algorithms. I have set out the guts of the code below

```
30 INPUT "Design Frequency in
MHz ";F
40 INPUT "Diameter of elements
in mm ";D1
W=299800!/F
D2=D1/W
INPUT " Boom diameter in mm
";B1
B2=B1/W
100 INPUT "Required number of
directors";N
B3=B1*((25.195*B1/W) -
(229*B1^2/W^2))
IF B3>.66*B1 THEN B3=.66B1
A=.5179-.4328*(D2^.2078)
LR=A+(.007344+(.1794*(D2^.1996)))*EXP(-
.07586)
LR2=299800!*LR/F
LPRINT USING "Length of
reflector:-
####.#";CINT(1.12*LR2)+B3;:
LPRINT "mm"
LPRINT "Overall length of folded
dipole:-";CINT(.476*W);"mm"
FOR N=1 TO N
L1=A+(.007344+(.1794*(D2^.1996)))*EXP(N*(-
.07586))+B3/W
L2=299800!*L1/F
LPRINT "Director ";N, " :
";:LPRINT USING
"####>#";L2;:LPRINT "mm"
NEXT N
```

This may not be a particularly elegant way of performing the calculation process, but it is quick and it gives results identical with those using the spreadsheet approach. It asks for inputs of element diameter, boom diameter, operating frequency and desired number of directors. It then calculates and prints out the lengths of the reflector, driven element (folded dipole) and each director up to director N, where the routine stops.

Element Spacings

All DL6WU yagis have the same element-to-element spacings when these dimensions are expressed in wavelengths. These spacings are critical to the design, as they determine the feed impedance of the antenna. The first director seems very close to the driven element; this is deliberate. The spacings are set out below, and are a direct lift from David Tanner's article. All are expressed in wavelengths.

Reflector to driven element: 0.240
Driven element to D1:0.075

D1 — D2	0.180
D2 — D3	0.215
D3 — D4	0.250
D4 — D5	0.280
D5 — D6	0.300
D6 — D7	0.315
D7 — D8	0.330
D8 — D9	0.345
D9 — D10	0.360
D10 — D11	0.375
D11 – D12	0.385
D12 — D13	0.390
D13 — D14	0.395
D14 – D15	0.400

After director 15 all director to director spacings are set at 0.400 wavelengths.

Antenna Design

Designing antenna is simple. Determine the diameter of the elements and their mounting arrangement, i.e. through the boom or insulated. Determine the boom diameter if the elements are to pass through it. Determine the length of boom desired in wavelengths, and from that, the number of directors. Note that the DL6WU design should have a minimum of 9 directors for best operation, though I have built one with 6 directors and it seemed to work quite well. Using the VK3AUU algorithm, and whatever calculation method is most convenient, determine the uncorrected lengths of each of the elements in the proposed antenna. If through the boom element mounting is to be used, calculate the boom correction factor, and add this amount to the lengths of each director and to the reflector. The dipole is not normally corrected, as this usually straddles the boom rather than passing through it. Indeed, better balance at the feed point is achieved if the dipole is fully insulated from the boom, though this is by no means essential.

Remember that conversion of dimensions to wavelengths is necessary for using the VK3AUU algorithm, but not the G3SEK formula. Both of these are taken into account automatically in my BASICA routine.

Element spacings are then calculated by multiplying the spacings given above by the wavelength of the antenna design frequency.

Wavelength (mm) = 299,800/ f , where f is the design frequency.

The usual driven element is a folded dipole whose overall external length is given by David Tanner as 1.066 times the length of the first director. I normally calculate this as 0.476 wavelengths, which is in most cases pretty close to same thing. Gunther Hoch says that the construction of the folded dipole is not particularly critical, so the leg to leg spacings can be set to a value, which is convenient. The dipole is fed from 50 ohm coax via a simple half wave balun, which matches the inherent 200 ohms at the balanced feed to the unbalanced 50 ohm coaxial cable. Other convenient feed arrangements can be used of course.

Tuning

If all is well, a DL6WU antenna using the folded dipole and balun scheme should have an SWR rather better than 1.5 : 1 on construction, and will work well without further tuning. Very satisfying!

Conclusion

Although the DL6WU is no longer the ultimate antenna for the serious VHF Dxer or moonbouncer, it still gets very close to the best currently available. For the amateur with a nondescript pile of aluminium tubing, which he wants to put to use in a very effective DIY antenna, the DL6WU design must surely be unbeatable.

Appendix – Reference Articles

1. Yagi Antennas. Principle of Operation and Optimum Design Criteria. G. Hoch, DL6WU, in *VHF Communications*, 3/1977
2. More Gain With Yagi Antennas. G. Hoch, DL6WU, in *VHF Communications*, 4/1977
3. Extremely Long Yagi Antennas. G. Hoch, DL6WU, in *VHF Communications*, 3/1982
4. DL6WU Yagis for 23cm. Rainer Bertelsmeier, DJ9BV in DUBUS 2/1994
5. Yagi Antennas for UHF/SHF. G Hoch, DL6WU, in The ARRL UHF/Microwave Experimenters Manual (1990) Page 9.1 et seq.
6. Beam Antennas & Feedlines. G. Hoch, DL6WU, Chapter 7 of the VHF/UHF DX Book, DIR Publishing (1992)
7. The VK3AUU Yagi Design. D. Tanner, VK3AUU, *Amateur Radio*, February 1988
8. Yagi Facts and Fallacies. Joe Reisert W1JR, in *Ham Radio*, May 1986, P 103.
9. Boom Corrections to Element Lengths of Yagis at 144, 432 and 1296 MHz. Guy Fletcher, VK2KU, *Amateur Radio*, March 1999

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A meterless capacity meter

Neville Chivers VK2YO
57 Vulcan Street
Kingscliff 2487

This device has been in use in my shack since necessity forced me to make it almost 30 years ago. Wishing to save the cost of variable capacitors on preset coils I needed an instrument to measure the variable capacitors so that they could be replaced with the nearest standard fixed value capacitors available.

T1, T2 and T3 can be any general purpose transistor. eg. BC108 etc. T3 is the business end. This transistor drives a bridge circuit. The bridge circuit comprises the 25k ohm linear pot together with the standard "C' and the unknown "C". The Crystal earpiece , ex an AM transistor radio, takes the place of a moving coil meter to indicate when the bridge is balanced. Attached to the shaft of the 25k ohm linear pot is a suitable pointer knob with a paper scale underneath. T1 and T2 form a multivibrator to produce an audio tone to drive the bridge. I used a 24 pF capacitor as my "C" standard and I can measure from 5 pF to at least 0.01 mFd with this instrument.

After switch on you will have an audio tone in the earpiece with your standard "C" in circuit.

Select some capacitors of known values to calibrate the paper scale underneath the pointer knob of the 25k ohm linear pot. Start with 100 pF across the unknown terminals and rotate the knob until you get a null in the sound in the earpiece. This indicates the bridge is balanced. Rock the knob left and right slightly until the sound reappears in the earpiece and then mark 100 pF on the scale. Repeat as many times as you like with the known capacitors you have on hand until you have a useable scale to read off.

I have found this instrument particularly useful in determining the minimum and maximum capacity of unmarked variable capacitors that have come my way over the years.

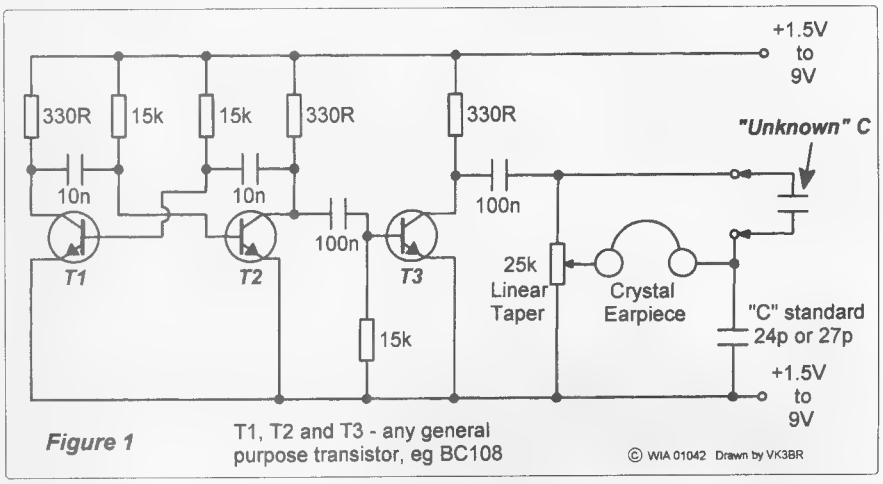

Figure 1. Meterless capacity meter circuit.

TO ALL INVIGILATORS

Due to the implementation of changes to the accreditation of invigilators the WIA Exam Service will be closed from 21 December 2001 to 1 March 2002 inclusive.

Completed exams for marking must be received in Federal Office by **Monday 10 December** to ensure the results will be in the mail to candidates before Christmas. Every endeavour will be made to have all results out before Christmas but no guarantee can be given on any papers that arrive after the 10th

Any orders received in January and/or February will be processed. If material is ordered by invigilators **not accredited** under the new system the event must be held prior to 1 March 2002 otherwise the event will be declared invalid and all candidates will have to re-sit.

What can you do with 4 watt?

Joe, W1JR refuses to accept that the DX ever disappears.

He says "August is usually a slow month DX-wise and conditions aren't that great. However, despite this, I put on air a new Yaesu FT-817 just 4 weeks ago and the latest tally is over 158 different DXCC entities and 35 zones worked (missed zones 3,4, 19, 30 and 38). No help or nets or going from QRO to QRP! The antenna is a Hygain TH-11 up 20 metres. Contacts are split, very close to 50% for CW and SSB with over 90 worked on each mode! Not bad for 4.0 watt! DX is still alive and well." So there you are, dedication and enthusiasm is all that is required. [TNX W1JR and OPDX]

Signal fades for ham radio

Kim Quillan

Reprinted with permission from *The Courier* Ballarat

You've heard it said over and over that technology is a wonderful thing.

Technology has been responsible for great advances in such areas as medicine, business and industry.

It has also been responsible for the creation of hundreds of thousands of jobs in many different fields of everyday life.

While the computer age has introduced everyday Australians to such wonders as the Internet, video link-ups and other marvels of modem technology, has this advancement resulted in the decline of other forms of communication in letter writing, verbal conversation and even talking to friends and relatives on the phone). One form of communication which has experienced a gradual decline is the use of amateur (ham) radios. The computer age has taken its toll on the small band of avid radio operators in Ballarat - known as BARG (Ballarat Amateur Radio Group).

The Group, which was renamed BARG in 1972, has experienced a severe drop in membership. In its heyday, the local group had more than 150 members. This has fallen to a mere 55. But these members remain loyal to their hobby. "It's very easy to hop on a computer and talk to someone on the other side of the world, but you miss the thrill of turning the knobs on a ham radio to find the right frequency to talk to someone," said immediate past president and publicity officer for BARG, Doug Raper.

And, while it is easy to walk into a store, buy a computer and connect it to an Internet server, being able to use an amateur radio is a much tougher process before you can start communicating with others, Mr Raper said.

A licence is required before a person can operate a ham radio. Extensive study is required in various radio operating subjects, including theory, regulations and Morse Code.

"Many people are under the impression that ham radios are just like working an old CB, but it's not ... there is much more involved than just connecting a radio,"' Mr Raper said. Governed by the Wireless Institute of Australia, the Ballarat group was originally set up to send messages around the city. A radio station was set up to play music and, before long, there were dozens of people interested in talking to others from around the world. Like many other hobbies, ham radio operating carries some initial expense. It costs about $1000 to set up an amateur radio at home, but there is little on-going expense. But, one essential item for each amateur radio operator is a "shack". "Everyone needs a shack at home to house all their equipment and to have some privacy to be able to use it," the BARG publicity officer said.

Despite the local decline in membership numbers, coupled with the increased use of computers, there are still millions of ham radio operators around the world. Japan has the quickest ham radio operator membership growth, while the US boasts the most amateur radio users. Australia currently has 18,000 licensed amateur radio operators.

Mr Raper describes ham radio as an addictive hobby. "I average about four hours a week on the radio, which is not much by other people's standards," he said. Each amateur radio operator has a call sign that is specific in Australia, with call signs for Victoria starting with VK3. Almost all ham radio users have regular people they contact. "Most operators talk for years with the same people and, while they never usually meet in person, they know each other very well," Mr Raper said.

One of Mr Raper's "regulars" is a university lecturer living in Hawaii who, at one stage, had actually attended St Patricks College in Ballarat. "We found, each other on a frequency one evening and instantly struck up a friendship over the radio that has lasted for years," Mr Raper said. "In the past five years we have never met, although, we have exchanged photographs.

Doug Raper VK3 VBA in his shack

"Ham radio operators who do strike up a friendship over the radio usually share common interests." Mr Raper, who admits to owning a computer and being on the Internet, said amateur radio offered a different and exciting challenge. "You have to put a bit of work into it (amateur radio) just to make that initial contact. "Someone once compared amateur radio to a bowl of fruit ... it offers a variety.

"There are some (operators) who concentrate on Morse Code, there are others who chase satellites, some who run their radio through their computer and others who like packet radio, which is like the internet only on radio." One Ballarat district ham radio operator is even on a mission to speak to another person in every county of the United States - and he has almost reached his goal. Operating an amateur radio is not gender or age specific. While the number of female operators is few, there are three in Ballarat. And the age range of BARG members ranges from 14 to a man in his 80s who, in recent years, obtained his amateur radio operator licence.

It also seems the addiction of amateur radio is passed on from generation to generation. "The son gets hooked on it from his father and his father before him and so on," Mr Raper said.

For more information about BARG or obtaining your amateur radio licence, phone Mr Raper on 03 5332 3565.

Editor's Note. *I think all clubs should try and get coverage like this. You can set up a station for under $1000.*

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The Great Australian Science Show:
IT'S A GASS!

Photo 1. 80m Transmitter and Audio to Scope

Photo 2. Andrew VK3HFA , Bruno VK3BFT and Sharon VK3LYL help customers

Photo 3. Bruno VK3BFT oversees the 2m operation

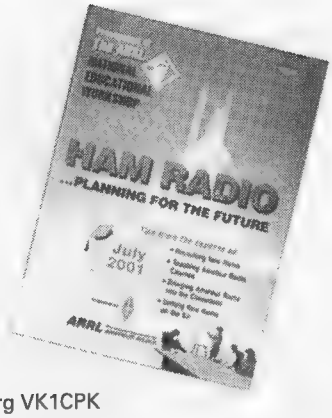
Photo 4. Andrew VK3HFA , Bruno VK3BFT and Sharon VK3LYL

Photo 5. Chris VK3JAA answering questions

Photo 6. Bruno VK3BFT and Andrew VK3HFA at work

Book Review

Ham radio ... Planning for the future



Publisher: American Radio Relay League (ARRL)

Author: Various

Reviewed by: Peter Kloppenburg VK1CPK

ISBN: 0-87259-837-3
Paperback, 278 by 214 mm, 156 pages

When you read the title of this book, committees, and especially those who organise and do the planning for future club events, will be delighted and impressed by the activities that have been organised successfully by various Amateur Radio Clubs (ARC) in the State of Indiana in the USA. Each of the 24 chapters was written by the organisers, who took a leadership role in getting amateurs with skills and special knowledge together, developed a plan of action, set a date, publicised the event, and conducted the activity with enthusiasm. The results were impressive: Increased membership, more communication between local amateurs on the bands, more younger people sitting for exams and passing, and more participation in club and public service activities.

The latter was achieved by applying the four Fs. Food, Fun, Frequencies and Fellowship. The realisation that a change in attitude was needed to make Amateur Radio an exciting hobby is demonstrated in every chapter of this book. For example: During club meetings, only 20 minutes were allocated to business matters, opportunities were sought to give help to new hams with operating and antenna building skills, how to run on-air sessions for very young aspirant amateurs, how to train experienced hams to convey their knowledge and skills to the next generation, and how to involve Scouts and Guides into Amateur Radio.

This book describes in detail how to recruit, how to teach Amateur Radio courses, how to bring Amateur Radio into the classroom, and how to get new hams on the air. Main sections of the manual describes what clubs have done to increase their membership, make meetings more interesting and rewarding, provide training in the application of new operating techniques, and attract young kids to the hobby.

Each of the 28 chapters, grouped effectively into seven main headings, and divided over 156 pages, was written by individual amateurs who took action to put ideas into practice and had success with it. The main headings in support of Planning for the Future are as follows: Amateur Radio Clubs, Instructors and Teachers, School and Youth Applications, Scouting Activities, Projects, General Interest, and ARRL Field & Educational Services. Most of the plans were carried out by teams of amateurs, some of whom had previous experience in special fields such as teaching, contesting, kit-building, scouting, management, or making presentations. The point of view of all the authors is that ham radio is an exciting and satisfying hobby with a great future in personal communications, and that it just takes a bit of time and effort to attract others to it.

This book describes in detail how to recruit, how to teach Amateur Radio courses, how to bring Amateur Radio into the classroom, and how to get new hams on the air

Most aspects of ham radio planning are covered adequately by this manual. Obviously, some chapters are of greater relevance to a particular local application than others are. For example, an Amateur Radio Club has different planning requirements than a Primary school that wants to communicate with orbiting amateur satellites. Other chapters deal with achievements such as E-badges for Scouts, and some chapters are especially suited to fit in with High-School student activities. There are also stories about Amateur Radio workshop activities that were very successful to the participants

One essential element in the minds of all authors was dedication to the future of ham radio. This was shown by the many hours of preparation that went into the set-ups of all the events that were described. Everyone who came to the organised events was attracted by the publicity that went on before, in newspapers, journals, and broadcasts.

I obtained my copy of the manual direct from the ARRL in the USA at a cost of US$15.00 plus US$5.00 postage. It took two weeks to arrive. You can place your order at: www.arrl.org/shop and pay via major credit cards. The ARRL publication number is: 8373

Amateur Radio
—an *essential* in every shack!

The following was received from Ian G3ZHI who has promoted Internet repeater linking around the world. This is a story about iPhone linking experiments in South Africa.

Internet linking of repeaters

by Brad Phillips ZS5BP

Background

On Sunday, 27 May 2001, during the Internet 2001, Ian Abel, G3ZHI, presented a very informative talk on the linking of repeaters using the Internet as the backbone. He explained two methods by which the linking could be achieved. It could either be done using a software package called Iphone or alternatively, an IRLP (Internet Radio Linking Project) node could be established to permanently connect the local repeater to the Internet.

Linking via Iphone was as simple as installing the software, setting up a connection to one's local ISP and joining the Ham Radio chat-room. Once in the chat-room, one selects the remote station to link to and establishes direct communication with that station. This system could be implemented by any interested amateur and could be left running in the background while one was surfing the net or downloading email, etc. It did however require monitoring of the system because it allowed non-amateurs to access any linked frequency. A simple VOX circuit completed the link between the PC and the radio. Iphone can also be used to talk directly to other people in the chat-room in an off-air mode (similar to a keyboard to keyboard 'chat' via packet).

To set up an IRLP node, however, required a slightly more specialized approach.

The requirements for an IRLP node are:

- a PC running Linux (486DX4-100 with 16MB and sound card)
- a link radio
- a permanent Internet connection
- an IRLP node interface board

Once the above infrastructure is in place, linking to remote repeaters is possible on a 24 x 7 basis (24 hours 7days a week) merely by sending the relevant DTMF code sequence to the node & the linking takes place via the Internet. As this linking only caters for node to node linking, it is more secure than the Iphone system above - it doesn't allow individuals to link directly off the Internet to a node. It also makes allowance for simultaneous linking of multiple nodes.

HARC members link to the UK

Having been inspired by the talk, Bruce, ZS5BR and myself began investigating. After downloading Iphone from the Internet, I got it running successfully on my PC. After some experimenting, I decided to attempt a link from our repeater to another over the Internet. During my experimentation, contacts were made with the following stations:

- ZR6ANF - Johan (operating directly through Iphone on his PC)
- G7CCS - Ken (operating directly through Iphone on his PC)
- KJ1Q - Jim (operating portable on a repeater in Connecticut)
- VUswl - Moodley (a SWL operating directly through Iphone on his PC)

At about 22h20 on Tuesday 29 May, I established a link from the Highway repeater system to Ian, G3ZHI. Ian was operating on the repeater situated at the Sheffield University in South Yorkshire. Very soon, a net was established on each of the repeaters with Ian running the UK net and myself at the helm in Durban. The following callsigns were heard on the 2 repeaters:

- G3ZHI – Ian
- M1ERS – Steve
- 2E1HTX – Trevor
- G0MVC – Chris
- ZS5WT – Brad
- ZS5WFD – Keith
- ZR5CW – Dave
- ZR5ADQ – Mike

After having exchanged greetings between the various stations, a very enjoyable & interesting net was conducted for approximately 45 minutes. Throughout the net, the audio quality was exceptional with only occasional glitches being experienced. The average loss of speech was around 4%; this made no difference to the intelligibility of the conversation. The net was terminated shortly after 23h15 and was followed by a very enthusiastic discussion on our local repeater. The consensus was that the club should further investigate this mode of communication for our repeaters.

The final cost of this all was a local phone call of around 50 minutes. The link was established using a 33.6kbps modem and Pentium 100 PC.

So where to next?

Further investigation into the finer details of the available options has prompted the Highway ARC to establish an IRLP node linking the Highway repeaters to the Internet. A permanent Internet link has already been located, as have many components to build up the required PC. A suitable radio will be prepared and as soon as the required interface and software arrives from the US, we hope to establish the first IRLP node into Africa - another first for HARC and KZN?

Who was it that said that the Internet would be the death of Amateur Radio? —I think not!

Internet sites on repeater linking

http://www.qsl.net/g3zhi - Ian Abel's homepage

http://www.irlp.net - IRLP homepage

http://www.harc.org.za - visit the FTP site to download Iphone

If you require assistance getting Iphone operational, email me at zs5bp@yebo.co.za or Ian at g3zhi@hotmail.com and we will try to assist.

Happy linking - see you on the IRLP
http://www.qsl.net/g3zhi

Ian Abel G3ZHI, 52 Hollytree Ave. Maltby, Rotherham, Yorkshire, S66 8DY
Tel: 01709 799911 Mobile 07748928916

GMDSS: Safety Compromised at the Peril of Seafarers?

The Global Maritime Distress and Safety System is floundering because people are blinded by the technology. The value of human presence must not be downplayed.

By Ian Godsil VK3VP

When I was a lad I became fiercely interest in radio broadcasting, along with my natural bent of classical music. I wondered why stations did what they did, then how did they do it? This led to the dual interests of what was going on inside my receiver, and programming philosophy. Also, very quickly I perceived that there was local broadcasting, international broadcasting on short waves, and specialist broadcasting (which I later came to know was called "commercial"). And there was Morse Code. What a wonderful sound! Later I came to regret that I did not get into Amateur Radio much earlier than I did and take advantage of this mode, and others.

In my late 30s I went through a strong phase of wanting a boat. I even got myself a Marine radio licence and realised that if I had a boat and a big beam, I ought to do quite well! This led to an interest in shipping in general. Now my wife and I help out in a Seafarers' Mission, and this has afforded me the opportunity to talk to seafarers and their officers about life at sea and all that goes on. The following thoughts may be of interest to readers today, as we have come to rely on the efficacy of technology as the be-all-and-end-all of modern living.

It may surprise readers to know that Morse Code is still commonly used in Mediterranean, Middle Eastern and Asian parts, even though its official use world-side ceased on 1 February, 1999. Many third world countries cannot afford the Global Marine Distress and Safety System (GMDSS) equipment, regardless of International Maritime Organization guidelines. Morse Code has survived for 160 years and is a testimony to a form of communication that relied on human abilities.

Under the Morse system, the number of 'false alerts' remained, in general, under 1% when human operators were involved. Even in the 1950s, when automated alarms appeared in radio rooms, the administrators of the day had the sense to keep human radio watches for at least eight hours a day. This was impressive and acknowledged the worth of human presence in a high-risk working environment. With GMDSS the false-alarm rate can be between 95%-99%! So are we now in danger of losing what has been learned?

Focus Shifted

The efficiency of the old system, using a radio officer, was tied to the fact that the ground rules, the basic distress structure, never changed from the voluntary scheme at the turn of the 20th Century. Today, its replacement, GMDSS, is floundering because the focus has shifted on to the importance of the technology employed. GMDSS administrators are constantly calling for changes in the system's apparatus.

Overworked

All these costly and time-consuming changes are attempts to make the system easier for operators, who basically have just two weeks' preparation in gaining an internationally recognised operating certificate. In reality these changes probably confuse them. The professional seafarer is already overworked in the automated area, with crew numbers having been cut. (You should *see* the modern bridge – just bristling with computer screens and desks!) It has been estimated that the flow of data to ships has increased by 23,000% since the inception of Morse Code.

An officer of the US Coastguard said that, after two years of using GMDSS, the false-alarm rate for Digital Selective Calling had fallen from 99% to 95%, and for 406Mhz Emergency Position Indicating Radio Beacons from 99.5% to 97%. What a mess! In the past, in distress situations it was relatively easy for a radio officer to deal with callsigns that were made up of four letters, eg GBTT for the *QEII*. Today the operator has to deal with formats such as "356433000", even though these are largely automated.

What has gone wrong?

It has been said that we have become blinded by the power of automation and its potential for saving costs, relegating the importance of the human factor. We see this all around us, and we see businesses "falling over" in their quest for large computerised systems and the need to make enormous profits. At sea, this could mean more catastrophes.

Rear Admiral John Lang, head of the UK's Marine Accident Investigation Branch, in a report on a near-collision, noted that the modern-day officer-of-the-watch has to be a radio officer, ship's manager, navigator, lookout, helmsman and chief amendments officer for reams of regulations and documents. Small wonder, then, that such personnel are overworked and prone to mistakes.

Distress situations still require sharp responses, which are hindered by overwork. The human desire to interact as social beings at work has not changed either. Reducing manpower and relying too heavily on automation reduces interaction between officers and crew.

GMDSS is a good system, excellent in fact; but automation alone cannot interpret situations. Only the ingenuity of the human mind can do this (and get it wrong at times) with a sure sense that things will work out OK.

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John Martin, VK3KWA
FTAC Chairman

Winlink

The Australian Communications Authority has looked into the operation of the Winlink message forwarding network, and has advised the WIA that it does not comply with Australian amateur licence conditions.

The Winlink network consists of a number of HF packet stations that are all connected to a central e-mail server. It allows amateurs in ocean-going vessels to send and receive Internet e-mails from friends or family members. In a letter to the WIA (ACA reference no. X2001/0426), ACA explained that there are two main reasons why it is not legal for Australian amateurs to participate in the Winlink network.

The first reason is ACA's policy that non-amateurs must be prevented from getting access to amateur transmitters. If an unattended amateur station (such as a packet mailbox) is connected to the Internet, it is possible for non-amateurs to send e-mails, which will then be relayed by the amateur station. For this reason Clause 11 of the amateur Licence Conditions Determination (LCD) does not allow automatic or computer-controlled stations to be connected to a public telecommunications network.

The other legal problem relates to international restrictions on third party traffic. The LCD allows us to carry third party traffic from any country that has a third party agreement with Australia. But at present we have third party agreements with only five countries (the USA, Canada, Israel, Honduras and the Solomon Islands), and any third party traffic from other countries is illegal. The only way to comply with this regulation would be to hold all incoming messages for manual checking and only pass messages which originated in one of the five countries listed above.

Australian Winlink stations have already ceased operation, but there is also a message here for all packet sysops. It is important to filter your incoming messages and make sure that non-amateur traffic is not passing through your station. This applies not only to Winlink traffic but also to messages from any kind of packet-Internet gateway.

Internet Repeater Linking

Further to the above, please note that clause 11 of the LCD applies only to gateways which allow non-amateur traffic to pass through the amateur network. It does not prevent the use of secure Internet links to forward amateur-to-amateur traffic. The test is whether non-amateurs can get access to the amateur stations that are connected to the link. If the link can only be accessed via amateur stations operating on the air, you are in the clear.

The same considerations apply to various systems used for linking of voice repeaters. Systems using software such as "iPhone" are a problem because non-amateurs can access them via a dial-up connection to a web page. Any connection of this kind of link to a repeater is a direct breach of clause 11 of the LCD.

The new IRLP linking package does not have any of these compliance problems because it works differently. It uses secure Internet links that cannot be accessed by non-amateurs, and traffic can only enter and leave the link via licensed amateur stations. So if you are interested in Internet linking, IRLP is the only way to go.

Digital TV and Channel 0

There was much rejoicing when we heard that digital TV would operate only on channels 6-12 and on UHF, and that analog TV would be phased out in late 2008. At last we can see an end to channel 0 problems.

However a recent newspaper article suggested that the analog closure could be delayed until 2014 or even later. This is quite likely considering the very high cost of digital receivers or set-top boxes. The delay could be even longer in country areas where digital transmissions may not even begin until 2004 or even later.

The other side of the cost issue is the fact that TV operators will have to run two transmitters-analog and digital-during the changeover period. It would save money if existing VHF transmitters stayed in operation until the analog services close down. So it is possible that the introduction of digital TV will actually prolong the life of those old channel 0 transmitters.

Call Book Update

Band plans:

In the diagram that accompanies the 13 cm band plan, the words "All Modes" should be deleted from the 2302-2400 MHz segment. This part of the band is no longer available for amateur use.

Repeater updates:

The Bundaberg 6 metre repeater VK4RBG on 53.775 MHz is now in testing phase. VK2RAE in Young (146.775) is operational.

Broadcast station listings

On 1341 kHz, change the callsign 3GL to 3CW. This narrowcast station carries programming in Chinese, but I think I heard the callsign correctly! The following stations have also changed callsigns: 4CA Cairns in now 4EL, 2GZ Orange is now 2EL, and 3CV Maryborough is now 3EL. These stations now use the ID "Easy Listening".

3UZ, which identifies nowadays as "Sport 927", has a new translator on 1467 kHz in Mildura. The frequency was previously occupied by 3MA, which has moved to FM.

On 1116 kHz, narrowcast station 3AB has ceased operation, and the frequency is now occupied by commercial station 3AK. This change is based on the theory that 3AK's low ratings were at least partly due to poor coverage on their old frequency of 1503 kHz. (Quite strange when one recalls that they used to have quite high ratings, even back in the sixties when their power was only 2 kW).

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St. Mary's Island, AS096 — IOTA *Islands on the Air*

5th May, 2001 to 7th May 2001

Event organised by Manipal & Mangalore Hams
http://www.vuiota.com
Report by Sri, VU2SBJ,
Manipal, vu2sbj@vuiota.com

St. Mary's Island (constituent part of AS096 group of Isles) is about 3 km from the coast of Malpe in the Udupi district. It is barren without habitation (human), shelter and drinking water. About 400 m by 150 m, the small isle is mainly explored by tourists who visit for a few hours, usually on weekends when a few boats offer services from the Malpe coast.

The boat takes about 25 minutes from the Malpe coast to the island. Some boats cannot go all the way to the island, and tourists are transferred into a smaller boat. Overnight stay on the island is restricted by the police authorities of the district.

Beginning at about 0530 UTC on Saturday, 5th May, 2001, the IOTA station was on the air almost continuously till about 0030 UTC on Monday, 7th May, 2001. With the 10 operators who participated, this IOTA event operated 4 stations on phone and CW on various bands simultaneously.

Amidst lot of WX uncertainties the IOTA to AS096, The St. Mary's Island was a grand success. The total count of logged QSOs crossed 3,500 in the less than 40 hours of effective operating time. Logs are still being sorted out and more statistics will soon be available. It is our desire to QSL every QSO logged.

A well planned event by the Manipal and the Mangalore hams, the IOTA was the first of its kind for all operators who participated. Hoping WPC's approval will come in on time, which eventually did, other coordinating efforts began just a few days prior to the scheduled date.

The team that took part included Manikant-VU2JRO, Bhat-VU2NJN, Sri-VU2SBJ, Gopi-VU2GPH, VU2MHC (MIT Ham Club, Manipal) from Manipal and Mur-VU2MTT, Chets-VU3DMP, Pai-VU2PAI, Prakash-VU2JIX, Rohit-VU2RDQ and Sukanya-VU2RDJ from Mangalore. SWL Laxminidhi from Manipal and two others from the Mangalore Coast Guard also accompanied the team.

These were the 4 stations we had eventually set up.

Station 1: HF

RIG - Kenwood TS 850 S
ANT: 3 element 5 BAND YAGI, Cushcraft MA5B (10/12/15/17/20) metres
CABLE RG213
MAST FOR ANT - 17 foot MAST
180 Ah LEAD ACID
CHARGER – 35 VA SOLAR PANEL
Shelter - Pre-erected bamboo frame with woven coconut leaves and tarpaulin.
Operators - VU2PAI, VU2MTT, VU3DMP, VU2RDQ
nb: the camp kitchen was also in the same shelter - now you know why there were so many operators in one place! The camp kitchen was operated by VU2RDJ.

Station 2 : HF

RIG - Yaesu FT 757
ANT1 - 10 m 3 element homebrew YAGI;
MAST1 - 10 foot GI pipe;
CABLE RG 213
ANT2 - 15 m 2 Element homebrew YAGI;
MAST2 — 17 foot Al;
CABLE RG 213
TUNER Homebrew
BATTERY - 180 Ah LEAD ACID;
CHARGER - 35 VA SOLAR PANEL
Operators: VU3DMP, VU2MTT, VU2JIX, VU2RDQ
Shelter: Homebrew - tarpaulin tent with bamboo supports

Station 3 : HF

RIG - Icom IC 751
ANT1 - Fritz 3 BAND (20/15/10) Vertical antenna with mast in the water
CABLE RG213; MAST12 foot Al
ANT2 - HOMEBREW G5RV ALL BAND horizontally supported on coconut trees
CABLE2- RG 58;
TUNER - Homebrew
BATTERY - 88 Ah LEAD ACID
CHARGER - 35 VA SOLAR PANEL
Operators: VU2SBJ, VU2JRO, VU2NJN, VU2GPH, VU2JIX, VU2MTT, VU2PAI, VU3DMP, VU2RDQ, VU2RDJ
Shelter: Homebrew - tarpaulin tent with bamboo supports

Station 4 : HF

RIG - Icom IC 725
ANT - Diamond CP6;
MAST : AL 17 foot;
CABLE : RG 213

BATTERY - 180 Ah LEAD ACID;
CHARGER - 35 VA SOLAR PANEL
Operator: VU2MTT
Shelter - Commercial dome tent

This shows the enormous amount of luggage that was carried. The 6 lead acid batteries (2 extras) were the bulkiest items. A very useful sledge prepared by VU2RDQ was a boon to move the batteries. About 250 litres of drinking water, and another 50 litres for 'other' purposes came second in terms of bulk. Tarpaulins, bamboo staves for tents, aluminum masts, radio equipment and antennas came in next.

In case of rain, adequate water proofing for equipment (worth our life for most of us), utensils for cooking, and food were carried. Rain and a flat tyre delayed our start by about 60 minutes. Eventually after a quick breakfast specially arranged by VU2NJN at the wee hours of the morning at a hotel in Udupi, we reached Malpe and began unloading stuff from a mini truck and 3 other cars at about 7:45 am Saturday. It took about 30 minutes to load the boat, and the same to unload after about 25 minutes at sea. It was drizzling and the sky was dark. You can imagine the uncertainty in our minds. Fortunately, it was not windy. The boat people refuse to travel if it is windy.

We landed on the island and unloaded all the stuff using a human chain. It took us about 4 hours to get things in place and set up 2 stations on the island. Fortunately it stopped raining. (Later the temperature went up to 42 C). We were the only people on the island then. The third and the 4th station came up later. A very useful tip from K2KW encouraged us to install at least one vertical with the mast right in the sea water. You have got to see to believe how dramatically it improves the performance of the antenna compared to that of the other erected beams (for more details on the special performance of verticals in salt water, visit http://www.k2kw.com/k5k/dxcomp.htm).

The propagation condition from St. Mary's Island was overall moderate with solar flux showing 165 points on Saturday and 160 points on Sunday. The peak was showing a downtrend in the coming days.

10 m was good on 5th May during the 12:00z to 15:00z with a huge pileup usually from Europe. There were stations from N.America, S.America, JA, VK's coming through pretty well. The condition on 15 m was exceptionally good and the pileup from Europe was tremendous during 17:00z to 20:00Z. Also some stations from N.America/S.America were strong on 15 m. However 20/17/12 m bands were not encouraging on 5th May. But we could log maximum stations during the peak time on 12 m on 6th May. 20 m improved on 6th May with stations from Europe, N.America, S.America coming through pretty well. 17 m was quite moderate. We did our best to log maximum QSOs with optimum band propagation and minimum operating time.

We stopped operations early in the morning on the 7th (Monday). The specially hired boat picked us up at 7 am. We were almost done with disassembling all the stations and the other stuff. It amazing how much less time it takes to pull down a station as compared

Photo 1. The Group on the beach with their boat

Photo 2. Prakash VU2JIX operations

Photo 3. Mur VU2MTT G5RV Station

Photo 4. Bucket chain unloading

Photo 5. Cushcraft MA5B beam being setup

to setting it up! It took us less than 90 minutes to get all the stuff back to one place. We reached the shore of Malpe at about 9 am. A busy day at work for each of us looked certain. Nevertheless, it was worth every minute of the fun we had on AS096.

The small effort to publicize the IOTA event on the web paid off well. Though the event was confirmed just a few days prior to the event after WPC's letters came in, the good response on the band made all efforts towards our maiden IOTA very worth while.

A simple and efficient computer logging program

Ian Alexander VK3DDL
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Over recent years the use of computers by amateurs has increased, and many logging programs are available. I have tried several of these and found that if one is to enter all the information requested, i.e. Date, Callsign, Name, QTH, Frequency, Time, Signal Report, etc. the process can be extremely time consuming, and because of the amount of data, can also lead to errors.

The following is a fast, simple and efficient DOS database program that I have used for many years, and which requires minimum time and effort not only to set up, but also to enter the data.

The program consists of three small files –

LOG.ANS This is just a text heading to go at the top of the screen. It can be as simple or as elaborate as you wish.

LOG.BAT The batch file that does all the work.

LOG.DAT The data - list of contacts – again as simple or elaborate as you wish. In my Log.Dat file I have just four columns – Date/Call Sign/Name/QTH

The program is as follows:

Log.Ans (Example only – make up your own.)

```
VK3XXX LOG DATABASE
```

Log. Bat

```
@ECHO OFF
CLS
IF %1!==! GOTO EXIT
TYPE LOG.ANS
FIND /I "%1%2" Log.Dat | MORE
EXIT
```

Log.Dat (Example only)

```
1Aug2001  G4XYZ JIM LONDON
5Aug2001 EA2ABC PAUL VALENCIA
11Aug2001 F8ABC HENRI PARIS
```

To run the program, enter the word **Log** (space) **Callsign**

The program has an additional feature in that you can enter any of the categories in the data file, and the program will display the contact/s.

E.g. If you want to know the call sign of someone who you remember as Paul, enter **Log Paul** and the program will list out details of all the Paul's in the database. Or enter **Log Christchurch** and the program will list out all entries that have Christchurch in the QTH column.

There are many people who know much more about computers than I, they leave me for dead when it comes to complicated problems with Windows based applications, yet these same people do not know the procedure for creating a simple DOS batch program.

To create the three files used in this logging program is very easy. You can use a MS DOS text editor, or do as I do and use the copy command.

Type **copy con** followed by the **file name** <enter>

Enter whatever you want in the file and when finished press <enter>

Then type **CTRL+Z** <enter>

E.G. To create Log.dat as per the example above:

```
copy con log.dat <enter>
1Aug2001  G4XYZ JIM LONDON <enter>
5Aug2001  EA2ABC  PAUL VALENCIA <enter>
11Aug2001 F8ABC HENRI PARIS <enter>
CTRL+Z <enter>
```

Use the same procedure for log.ans and log.bat

Incidentally, with the data file – create the file with two or three entries, and then it is only necessary to use the edit command to add to it. edit log.dat <enter>

Finally a quick explanation of how the program works.

The first line turns off the echo that DOS provides.

The second line clears the screen.

The third line works out if you have entered any search words, and goes to exit if you haven't (If '%1' the first search word, followed by '!' is equal to '!' then the search word is empty.

The fourth line prints your text heading (log.ans)

Most of the heavy work is done in line five - the FIND command is run with any search words entered in the LOG.DAT, the database of contacts, and the output is piped to MORE, which places a pause between pages of results.

Line six is a marker for the EXIT in line three.

A helix antenna for 2 metre satellite use

Home brewing a helix, VK5ZAI style

Tony Hutchison VK5ZAI

To be read in conjunction with my article on
A Satellite Tracking Antenna System Amateur Radio magazine May 2001

After using a 12 x 12 element crossed Yagi on 2m for a year or so for satellite work, mainly AO-13, AO-10, UO-22 and KO-25. I decided to construct a helix to make some comparisons.

At this stage I suggest that you read my article on "A Satellite Tracking Antenna" to get an idea on how the antenna is mounted. The elevation pivot is only 3m above the ground and the booms are end mounted so it is not a major job to swap things around and compare the results. Information was obtained from numerous publications including "The Satellite Experimenter's Handbook", "Satellite Anthology" both ARRL publications, Dr J.D. Kraus's "Antennas" as well as some personal input from a friend the late Vern "Rip" Riportella WA2LQQ.

Construction of the helix antenna is mechanically a little more difficult than a Yagi and requires a reflector behind it to function properly. This reflector should be 1 wavelength diameter for best results, although you can get away with 3/4 wavelength. Another disadvantage is that it has to be wound either R.H.C. Polarization or L.H.C. Polarization.

Points in favour are its wide bandwidth, being capable of operating 20—30% above and below its design frequency thus being useful for the weather satellites etc. It is also very forgiving when it comes to its dimensions when constructing.

Construction

The design frequency for this antenna is 145 MHz.

The main boom is 25mm square galvanized steel tube with a 1.6mm wall thickness and 5m long. This is for a 10 turn helix, and allowing approx 400mm to end mount it in a larger tube attached to the reflector. Each turn has a pitch or spacing of 454 mm so if you wish to add or subtract turns to suit your own personal requirements just add or subtract 454 mm for each turn, as they are evenly spaced.

I used 12mm fibreglass rod for the insulators cut to a length to give the helix a radius of 325mm. These were spaced 227mm apart on opposite sides of the square boom. I first drilled a 9 mm hole through both sides of the boom 25mm from the front end, then every 227mm along the boom. Then re-drill every alternate side *only*, with a 12mm drill to take the 12mm fibreglass rods.

In Photo 1 you can clearly see the copper matching strip as well as the start of the helix and the mounting plate with the collar around the boom at one end and the 50 ohm co-ax going to the "N" connector at the other.

I have added a small PTFE support between the copper matching strip and the plate that the "N" connector is mounted on, this takes the mechanical load off the connector centre pin, you can see it clearly in both photos.

The ends of these rods should be machined or ground down with a shoulder so as to fit into the 9mm hole on the opposite side of the boom which will stop them going right through. I used a good epoxy glue to hold them in

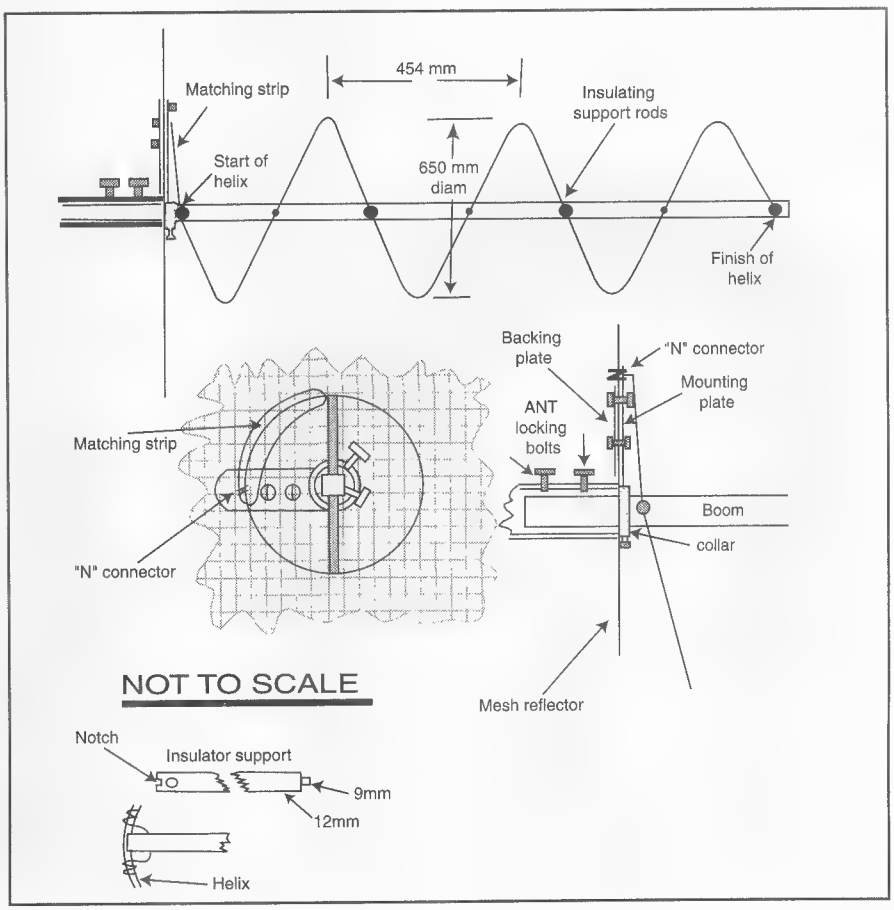

Figure 1

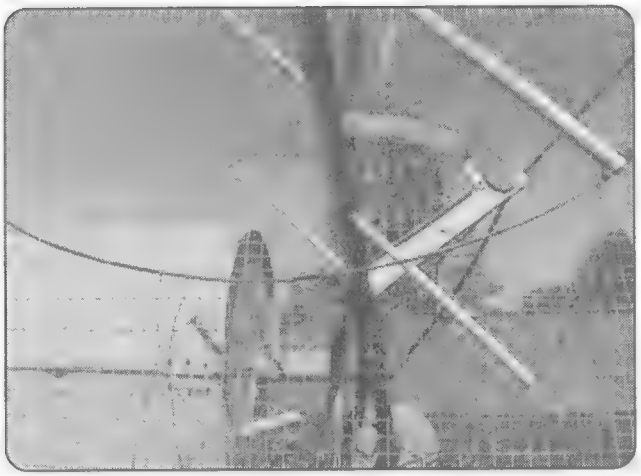

Photo 1

place, however they shouldn't come out once the helix is wound on them. The outer ends of these rods are V notched and a small hole (2-3 mm) is drilled 12mm from the end and parallel to the notch to tie on the helix wire and hold it in place. Note: When gluing these rods into place make sure that the V notch in the end will line up with your helix coil so it fits snugly. This will depend on whether you use LHCP or RHCP. In my case I used RHCP.

I used 3mm diam. (approx) copper wire for the helix. This is not critical; thin tubing could also be used. As the impedance of a helix is in the vicinity of 140 ohms, it requires a matching device to feed into 50 ohm cable.

This 1/4 wave-matching strip is made from a piece of copper sheet 0.5mm thick (not critical). With a radius of 325mm scribe an arc 525mm long on it, this is the middle. Now scribe 2 more arcs, one 25mm larger, and one 25mm smaller. Cut out this strip 50 mm wide, round one end and drill a hole 25mm in from this end to take the centre pin of an "N" type connector. Cut the corners off the other end of the strip to form a point. When assembled you will solder this to the feed end of the helix allowing 25 mm overlap for a strong solder joint. The helix can be any number of *full* turns, with the matching strip making an extra 1/4 turn.

Now to make an earthed mounting plate for the "N" type connector, I have chosen to mount this connector on the boom rather than on the reflector. Doing it this way means that the antenna and matching section can be removed as one assembly if required. Get some thick walled tubing (water pipe) that will neatly fit over the boom and cut an off a piece 20mm long to form a collar. Drill and tap this collar in two places 120 degrees apart so it can be locked onto the boom. Now get another piece of copper (or galvanised. iron) approx 350mm long by 50mm wide and 0.5mm thick and braze this to the collar on the opposite side to the locking screws.

Drill a hole 325 mm out from the centre of the of the collar and mount the N type connector, also drill two 6mm holes approx. 100 mm from each end of this mounting plate so it can be fastened to the mesh reflector with the aid of a backing plate made of the same material and 2 machine screws, the mesh being sandwiched between the two plates.

Assembly

After gluing the support insulators into the boom carefully wind the helix coil, tying it onto the end of the support insulators as you go, start and finish at a support leaving around 25 mm extra at the feed end to solder on the matching section. Now slip the collar with the bracket and "N" connector attached onto the boom until it is about 50 mm from the first insulator. *NOTE:* The matching section does *not* follow the same pitch as the helix coil. This is how it is tuned for the best SWR. In my case the matching strap ended up with only about a 50mm pitch for the 1/4 turn. The threaded end of the connector faces rearwards and fits through the mesh reflector when fully assembled. Solder the matching section to the end of the helix, butting it right up to the first support then the other end onto the connector.

The antenna is now ready to fit into the mounting tube on the reflector assembly. I haven't described this but I would suggest making up a frame of 25mm square tubing (similar to mine) and covering it with a mesh rather than a solid panel to lower the wind loading. In the centre of this you will have to fit a thick walled tube with 2 lock bolts to take the boom. After fitting the boom to the reflector assembly fasten the plate with connector to the mesh with the aid of the backing plate and machine screws.

Tuning the antenna

Leave the collar and lock bolts loose at this stage and connect up your coax and rig set on 145 MHz. with an SWR bridge to the "N" connector. Now slide the boom in and out to obtain the best match. It should be possible to get close to 1:1, on mine the junction of the matching strip and start of the helix was only about 45 mm from the reflector. When you are happy tighten up all the lock bolts on the collar and boom support and recheck the SWR and the job's done.

Performance

As I don't have an accurate means of checking antenna gain all I can do is compare it to the 12 x 12 element Yagi that I used to use. Gain wise it is similar however I found that it had fewer dropouts on AO-13 and AO-10. At present I am receiving AO-40 TLM at up to 20 over S9.

I would be interested in hearing from anyone who builds this antenna or a similar one.

I have thought of building a helix for 70 cm. and comparing it with my 21 x 21 element 70 cm. Yagi but it all takes time and at present 2.4 GHz is more important to get going.

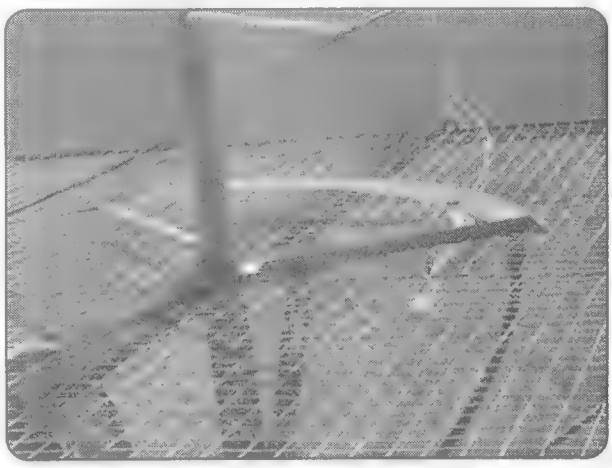

Photo 2

WIA makes submission to Productivity Commission

by Jim Linton VK3PC

In a submission to a body reviewing the Radiocomunication Acts, the Wireless Institute of Australia has called for greater recognition by government of amateur radio, licence reforms, and a better deal in terms of licence fees and charges.

The Productivity Commission has been charged by the Department of Communications, Information Technology, and the Arts, to review both the legislation and the role of the Australian Communications Authority. WIA Federal President, Ernie Hocking VK1LK, said the review is a rare opportunity to put forward viewpoints on the legislation, provide constructive comments about the ACA, and discuss matters of concern to the Amateur Service.

After filing the written submission with the Productivity Commission in Canberra, Ernie VK1LK said he thanked all WIA officers and members who have assisted in the putting it together. The WIA is one of 16 who have made a submission. The Productivity Commission will be holding public hearings in Canberra and state capital cities. The WIA submission begins by explaining the WIA's role, and the various community aspects or benefits that flow from the Amateur Service including education, emergency communications and WICEN, experimentation and development of communication technology.

It states "The contribution of the education component to amateur radio should not be under-estimated in terms of adding to the credibility of Australia as the Clever Country," and also fosters a strong sense of ongoing self-education.

The WIA highlights the pioneering work in the area of amateur satellites, and that some of the innovative techniques deployed by radio amateurs have resulted in commercial applications by others, with a dramatic example being that of Low Earth Orbit satellites.

In commenting on licensing, the WIA has renewed its call for an operator licence to be created for the Amateur Service. It submitted to the Minister for Communications in 1997 a case for a new type of licence, and has now told the Productivity Commission it believes that the Amateur Service is "significantly different" from other radio services.

The WIA and the ACA have struggled on a number of occasions, according to the WIA, in dealing with matters of specific concern to the Amateur Service that have arisen as a result of changes aimed at the commercial users of the spectrum. It said, "This situation could be made considerably simpler with the introduction of a decided Amateur Service licence type that addressed only those requirements of amateur operators."

The WIA, in referring to licence grades, acknowledges that after the World Radio Conference 2003 with the expected end to mandatory Morse code tests for amateur licences, Australia's current four amateur licences would be reduced to two - Unrestricted and Novice.

It also noted the development of a Foundation licence to be introduced in Britain early next year, and has advised the review that the WIA is likely to seek a similar new entry level licence for Australia.

On the topic of reciprocal and visitor licensing, the WIA said it believes that the current ACA approach to visiting radio amateurs is too restrictive, and not in line with practices in overseas countries including New Zealand.

This refers to short-term visitors, who are permitted in other countries to use their home callsign and adding a local callsign prefix, while the ACA practice is to require them to pay a licence fee and use an Australian callsign. In commenting on licence fees generally, the WIA believes they need a revised to better reflect the community benefits of amateur radio, increase the participation rate in the hobby, and afford juveniles and pensioners a discount.

The WIA further submitted that the role and contributions of radio amateurs have been recognised over the years, and it cites comments made by a former Communications Minister at the Ash Wednesday bushfire disaster, and the Prime Minister John Howard in his opening address to the WIA's Remembrance day Contest in August 2000.

The WIA observed that there is not legislative recognition of the fact that amateur radio provides a source of training and technically inclined people, for industry, in terms of national emergency or defence. It said, "This situation can be contrasted with the situation in other countries where the value of the Amateur Service has been officially recognised." The WIA referred to the United States situation where amateur radio is recognised for its value to the nation.

The submission also recognised the convergence of technology occurring within the Amateur Service. It mentions the interconnection of amateur radio and the Internet, and expressed the view that this activity, provide it is in accord with the spirit of the Amateur Service, should not be restricted by legislation and regulation.

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Come join us!

How to join ALARA

It is very simple to join ALARA. It is not necessary to hold an amateur licence at all; in fact we have some members who have been with us almost from the beginning without ever wanting to take out a licence. You do have to be a YL. Yes we are discriminatory that way.

To join just write to someone on the committee (a list is printed soon after the AGM in May) or direct to the Treasurer Bev VK4NBC, and we will send you information about ALARA and a form to fill in if you want to continue.

It costs only $12 a year which includes four newsletters containing news of activities nationwide and overseas.

We have around 200 members, about half of whom are overseas YLs. Many of these are sponsored into ALARA by a VK member. If there is a YL group like ALARA in the overseas country we are often given reciprocal sponsorship so we receive newsletters from those, too.

Amateur radio has given all of us friends all round the world. Just telling someone you hold an amateur licence or are a member of ALARA brings a smile of welcome.

Please join us. We would love to know you.

Monday night nets

Conditions on 80 metres have been quite variable during the last few months because there have been a number of storms, but nevertheless we usually have seven or eight and sometimes up to ten or eleven YLs on frequency.

If you have not yet tuned to 3.580/3.578 MHz on Monday around 1030 Zulu, you have missed out on an interesting natter session. Most weeks we start off with a weather report in each state as they join the net, but after that the topics vary as we each tell about our most interesting activities since last Monday.

Items of local and world news are interspersed with stories of local places we have visited and the rest of us learn about places to visit when next we are in that town. Families and gardens are bragged about in much the same way as they are when a group of friends get together anywhere in the world.

YLs out there, please join us, we won't frighten you away. OMs, tune us in for your YL and let her hear the interesting things we discuss, or call in for her and let her talk to us as well. We would love to have your input.

Luncheons here and there

Judy VK3AGC and Pat VK3OZ both attended the September luncheon at the "Melba Café" in Little Collins Street (on the second Friday each month) and Pat brought along a new ALARA member, Dianne VK3NDI along to meet the ladies.

Our congratulations go to Mavis VK3KS who has just celebrated her 80th birthday. HAPPY BIRTHDAY Mavis, from us all.

The monthly luncheons in Adelaide recently have been working luncheons as some of the details for the ALARAMEET 2002 are discussed. We hope to welcome Shirley and Myrna to those, soon. Now that Myrna has retired she is looking forward to being able to have lunch in town occasionally.

A photo is attached of the ladies enjoying the extra lunch held in September when Marlene was in VK5. As reported in the last ALARA column. The film was still in the camera last month.

For all of you with computers

A Modern Prayer

Every single evening as I'm lying here in bed.
This tiny little prayer keeps running through my head
God Bless my Mum and Dad and other family

Keep them warm and safe front harm for they're so close to me.
And God, there is one more thing I wish that you could do,
Hope you don't mind me asking, bless any computer too.

Now I know that it's not normal to bless a motherboard,
But listen just a second while I explain to you 'My Lord'.
You see that little metal box holds more than odds and amp-ends
Inside those small compartments rest so many of my friends.
I know so much about them by the kindness that they give
And this little scrap of metal takes me into where they live.

By faith is how I know them much the same as you,
We share in what life brings us and from that our friendship grew.
Please, take an extra minute from your duties up above

To bless those in my address book that's filled with so much love!
Wherever else this prayer may reach, to each and every friend,
Bless each mail inbox and the person who hits SEND.

When you update your heavenly fist on your own CD-ROM
Remember each who've said this prayer sent up to God.com.

Sent to me by Ella G0FIP

...and...

Ode To A Spell CheCker

Eye have a spelling chequer
It came with my pea sea
It plainly marks four my revue
Miss steaks eye kin not sea,
Eye strike a key and type a word
And weight for it to say
Weather I am wrong or write
It shows me straight a weigh.
As soon as a miss steak is maid
It nose bee fore two long
And eye can put the error rite
Its rarely ever wrong.
Eye have run this poem threw it
I am shore your pleased two no
Its letter perfect awl the weigh
My chequer tolled me sew.

Barbara, GW0SKC
(Reprinted from the Bylara Newsletter)

B J Slarke. VK2ZCQ.

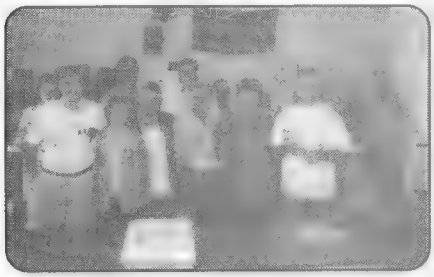
Huey gives Urunga a break

Following long term predictions of floods and heavy rain over the Easter period a request was forwarded to the force above the E layer, at the Convention committee meeting in early January, for fine weather over the Easter week end. All went well until late January, then there was a lot of rain causing a small flood. Then in early February the conditions deteriorated and by late February everything was very wet and waterlogged. That is the point at which the rain started and kept going, giving the area a reasonably big flood of about 4 foot 6 inches below the record 1950 flood. All the low area of the Urunga golf club was well covered and some of the flats near the railway bridge were flooded.

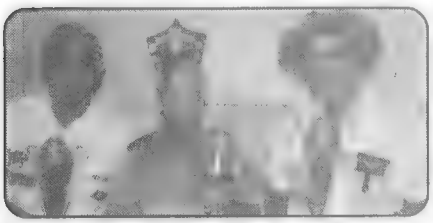
Fortunately the rain cleared and when April arrived most of the flood rubbish and water has dissipated.

The Easter weekend turned out fine and mild, giving the participants at the Urunga convention a perfect run after hidden TXs.

Remember when:



50th Urunga Convention. Convention Committee with the cake



Urunga Convention Easter 1998. Trophy winners L to R: A Austin VK2ADA, P Alexander VK2PA, K Golden VK2DGT

Contestants at Urunga 2001 convention: mainly the kids and their Yagi

The results of the events are as follows:

Saturday	
80 metre Mobile hunt	Adam Scamell VK3YDF.
2 metre Pedestrian hunt	Rod Summerville VK2URK.1st, Adam Scamell VK3YDF 2nd
80 metre Novice.	Reese Austin 1st, Carl Winkler 2nd
2 metre Multi TX Mobile	Karen O'Brien 1st, Adam Scamell VK3YDF 2nd
Talk in mobile.	Kim Piper, VK2ZW 1st, Brian Lindslay VK2BI 2nd
Sunday	
Urunga Scramble	Henry Lundel VK2ZHE
40 metre Fun event	Bryan Ackerly. VK3YNG, 1st
80 metre Novice	Carl Winkler. 1st Reece Austin 2nd
2 metre Mobile multi TX	Adam Scamell VK3YDF 1st, Ken Golden VK2DGT 2nd
2 metre Pedestrian	Adam Scamell VK3YDF 1st, Bryan Ackerly 2nd
Talk in Pedestrian	Craig Martin 1st, Adam Scamell VK3YDF 2nd
Overall Winner for the weekend and the Jack Gerrard Award	Adam Scamell VK3YDF.

Lucky door prizes competitions and raffles were drawn and all places were filled

The convention committee hope that everybody who attended the Urunga convention for 2001 enjoyed themselves and we will see you at the 2002 Do.

The names of the 1950 convention participants will be published when we have most, if not all, of the names to complete the list.

So far from February AR cover and photos in March AR, Coll Fletcher VK2ASF, Ted Gabrial VK2AVG, then VK4.Fox hunters, Allan Baird, VK2ZIW, Geoff Pages VK2BYY, Graham O'Brien VK2FA.

Special thanks to Ron VK4BRG for his talk on ARDF and Grahame VK2FA for details of his round the world on a shoe string. Also Henry VK2ZHE for video taping highlights of the weekend and Graham Vk2GJ for helping the fox.

73s from the Convention Committee

B.J.Slarke VK2ZCQ.

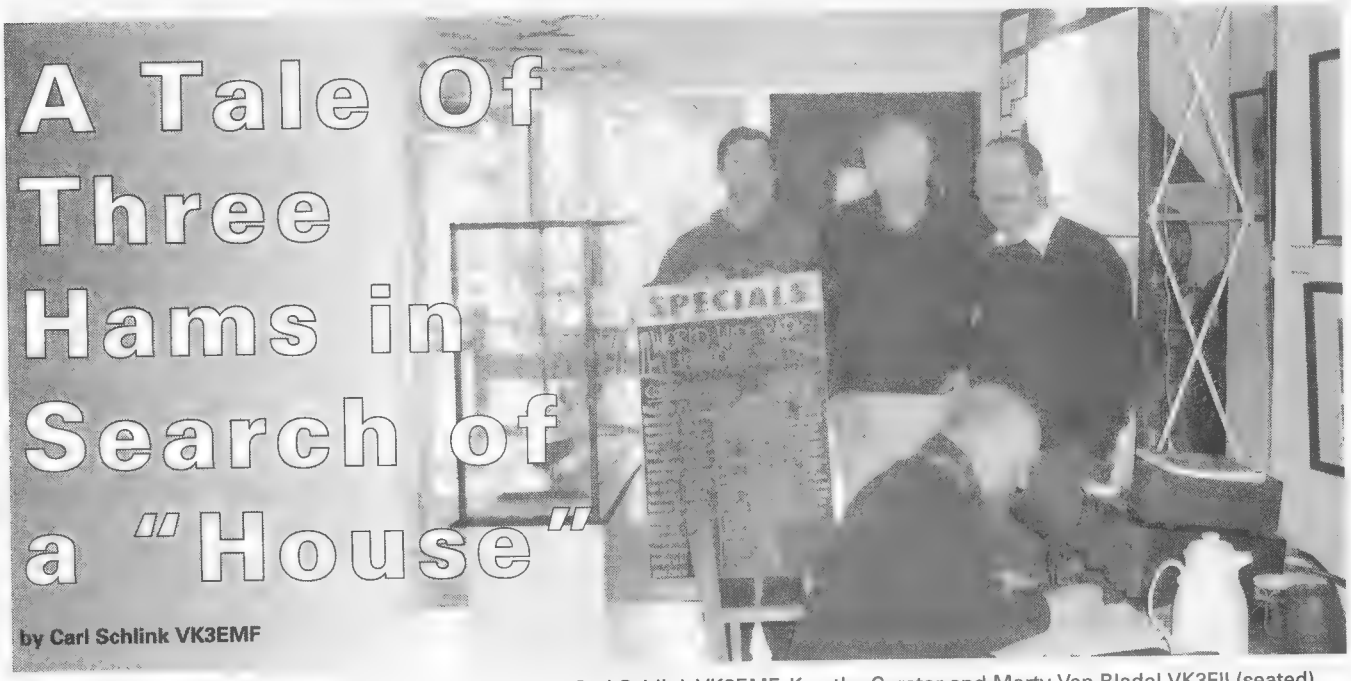
The International Lighthouse/Lightship Weekend (ILLW)

The International Lighthouse/Lightship Weekend (ILLW) took place from 0001 GMT on Saturday, August 18th until 2359 GMT on Sunday August 19th, 2001, when around 360 Amateur Radio Stations were established at Lighthouses and Lightships in over 46 countries. The event was not a contest, just a chance for like-minded Ham Radio Operators to enjoy themselves while making contact with other Stations and to promote public awareness of the role Amateur Radio and Lighthouses have played in assisting and maintaining safety at sea.

As available space in many Lighthouses was filled to capacity, the activity did not have to take place inside the tower itself. Field day type set-ups at the lights or other buildings adjacent to a light were quite within the guidelines and spirit of the event.

A Tale Of Three Hams in Search of a "House"

by Carl Schlink VK3EMF



Maritime Museum: *from left*, Glenn Alford VK3CAM, Carl Schlink VK3EMF, Ken the Curator and Marty Van Bladel VK3FII (seated)

THE AUGUST 18/19TH International Lighthouse/Lightship Weekend (ILLW) for 2001 has come and gone and an idea that was sown early last year to get involved in this event finally came to fruition. It all began with the obvious choice, for me anyway, the Cape Schanck Lighthouse. It had all the facilities we would need, including accommodation, to combine a pleasant weekend outing and help celebrate the great service that Lighthouses and their Keepers have provided to mariners over the centuries. Unfortunately, this selection proved to be the first of many hurdles we would encounter in our quest for a place to operate from.

Marty Van Bladel VK3FII, myself and our XYLs Carolyn and Lois (who were somewhat reluctant participants in the "lighthouse spotting" expedition) set out for the Cape Schanck Light with the idea that if we found it suited our needs we would make a booking for the Aug. 18/19th weekend, with the view to making it a Club event. We arrived there, spent an hour or two looking it over, pronounced it fit for operations and declared our intentions to the curators who were quite pleased with the whole idea. It was only then that we discovered that a Scouting Group was also booked in. The thought of a joint operation crossed my mind, but after canvassing this possibility when I got back to Melbourne I took the decision to look elsewhere and to this end Lois and I ventured out along the coast road the following Sunday looking for other Lighthouses and/or Beacons that would be suited to portable operations. That's when we came across the McCrae Light and as soon as I saw it I knew instantly this would suit our needs admirably and immediately got the digital camera out for some photos to e-mail Marty and Glenn Alford VK3CAM (who by this time had also expressed an interest in activating a Lighthouse) for their approval. While taking the photographs I noted that the McCrae Yacht Club was adjacent to the car park but unfortunately the premises were unattended. However I took the phone number down with the idea in mind of contacting the Commodore to canvas the possibility of them allowing us to operate from within their Club Rooms...just on the off chance that the middle of August turned on some nasty weather. I had visions of us sitting in the elevated Yacht Club and operating in comfort, with all mod cons laid on.

I had a dream...but not for long.

The Commodore informed me that there was a wedding reception taking place on the same weekend I had in mind, so, back to the drawing board. Fortunately this wasn't an insurmountable problem, I figured we could operate from the Lighthouse car park with the hope that we didn't interfere with the Yacht Club's PA system. Glenn, Marty and I sorted out what radio equipment we had between us and agreed on the best combination for the expedition. To that end I charged up 5 batteries for the exercise as well.

"LH-Day" was fast approaching and we now had our worst fears confirmed...the weather was going to be horrendous for

Gellibrand Lighthouse VK3EMF/AUS 079

Glenn VK3CAM at the operating position Gellibrand Lighthouse

Melbourne Maritime Museum Curator with VK3EMF

portable outdoor operations, especially at our chosen locale which was right on the beach. Anyhow, the die was cast and come hell or high water we were going ahead with the planned exercise unless a miracle occurred and an alternate venue cropped up.

Believe it or not, the age of miracles is still with us.

On the Friday preceding the planned excursion Glenn went for a lunchtime stroll, which took him down by the Melbourne Maritime Museum where the Polly Woodside is berthed. Whilst there he happened to notice a Lighthouse adjacent to the Museum, this in turn led to him approaching management on site and explaining what the ILLW was about and seeking permission to set up a station there. The response was very favourable indeed, but had to be confirmed by the curators. We received the ok that same afternoon with an offer to accommodate us inside the museum, alongside the Gellibrand Lighthouse, with everything laid on including a heater should we require it.

Our ship had come in! The all-important choice was an easy one: Goodbye McCrae, hello Gellibrand and thus VK3EMF/AUS 079 was officially registered for the ILLW.

The facilities provided for us saw the IC775DSP, FT7, FT270R and 25 amp Power Supply installed just inside the Maritime Museum's front door, which made us the first "attraction" visitors had to contend with. Quite a few stopped for a chat, some watched from a distance and some just passed us by with not so much as a cursory glance. Those showing interest in what we were doing were quickly engaged in conversation and handed AR publicity blurbs and copies of our Club (EMDRC) Bulletin.

The rest is history as they say in the Classics, we spent a most enjoyable two days activating the Gellibrand Lighthouse. Mine hosts Anne, Ken, Keith, Gordon and John from the Maritime Museum, Lorimer Street, Dockside, Melbourne made our two days as their guests a very pleasant experience indeed. We were given the run of the place, offered refreshments, allowed to bring our vehicles onto the premises and permitted to erect our antennae, which comprised three verticals (a Werner Wolf, Cushcraft R7 and an ex CFA Co-linear converted for 2 metres), right outside the Museum's front door. We were very spoilt indeed and this was probably made very evident in some of our "smug" comments as we spoke to fellow enthusiasts who were outdoors, cold, wet and windblown at various other lighthouses and beacons...poor souls.

The microphone was shared around over the two day period, with each of us doing 60 to 90 minute sessions at a time. Operating between the hours of 10:00am and 4:30pm on several bands, we made a total of sixty five contacts into sixteen countries and worked thirteen lighthouses.

As the operation from Gellibrand Lighthouse, AUS 079, ended on Sunday afternoon we reaffirmed our earlier commitment to return again next year.

Footnote: *The Lighthouse Weekend was of special significance to Marty and myself, with Marty being ex RAN and myself being ex Merchant Navy.*

Gil Sones VK3AUI
30 Moore Street, Box Hill South, Vic 3128

Directional Feedback Amplifiers

Amplifiers with improved output to input isolation were described by Zack Lau W1VT in QEX Jan/Feb 2001. The improvement in output to input isolation was achieved by using directional couplers to generate the feedback path.

A 20 dB gain preamplifier with directional feedback is shown in Fig 1. The 2N5109 transistor should be fitted with a heatsink. The transformers T1 and T2 consist of a 10 turn primary of #28 AWG enamelled wire wound on an FT-37-43 toroid. The secondary is a component lead stuck through the hole in the toroid. Phasing is important.

The performance is given in Table 1.

A 12 dB gain preamplifier with directional feedback is shown in Fig 2. The 2N5109 transistor should be fitted with a heatsink. The transformers T1 and T2 consist of a 10 turn primary of #28 AWG enamelled wire wound on an FT-37-43 toroid. The secondary is a component lead stuck through the hole in the toroid. Phasing is important.

The performance is given in Table 2.

The preamplifiers were built using direct wiring or ugly construction on scraps of PCB laminate.

The 20 dB gain amplifier had an output intercept point of +12 dBm and an input intercept point of -8 dBm. The 12 dB gain amplifier had an input intercept point of +11 dBm which was a substantial improvement.

Table 1. Performance of 20 dB gain preamplifier.

Frequency MHz	MS11 dB	MS12 dB	MS21 dB	MS22 dB	Noise Figure dB
2	-19	-54	21.5	-34	
5	-35	-51	21.2	-28	
10	-28	-47	20.3	-24	3.2
12	-26	-44	19.8	-23	3.2
20	-22	-40	18.0	-20	3.2
30	-17	-36	15.7	-19	3.3
50	-17	-31	12.2	-17	3.4
100	-21	-25	7.0	-14	5.1

Table 2. Performance of 12 dB gain preamplifier.

Frequency MHz	MS11 dB	MS12 dB	MS21 dB	MS22 dB	Noise Figure dB
2	-20	-49	11.5	-29	
5	-27	-49	11.7	-37	
10	-28	-45	11.7	-34	6.0
12	-32	-44	11.7	-33	5.9
20	-33	-39	11.2	-28	6.0
30	-32	-35	10.5	-24	6.0
50	-29	-31	8.7	-21	6.3
100	-23	-25	5.0	-16	6.8

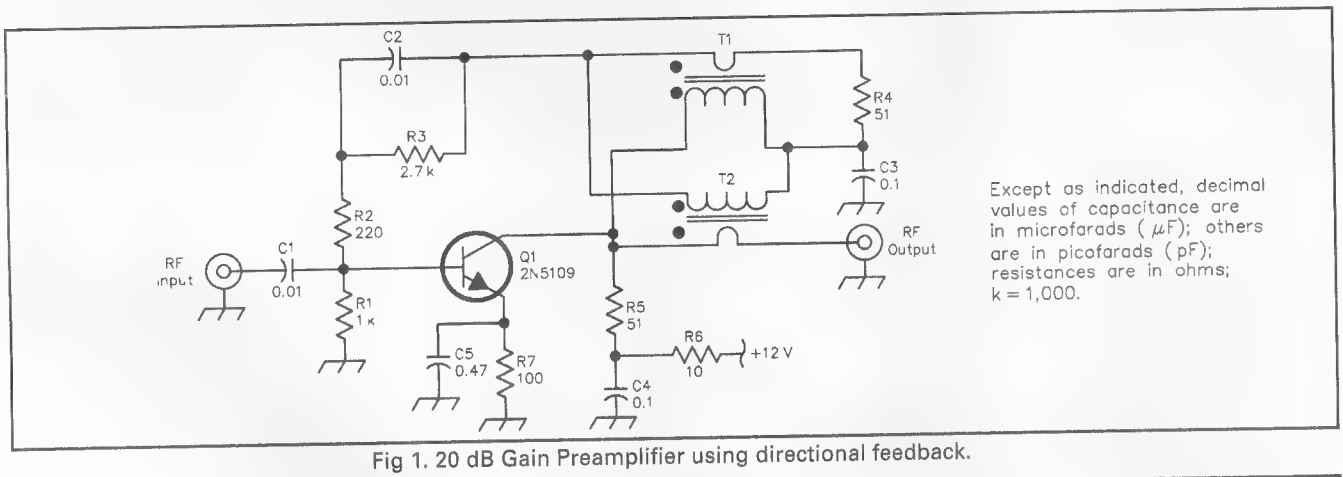


Fig 1. 20 dB Gain Preamplifier using directional feedback.

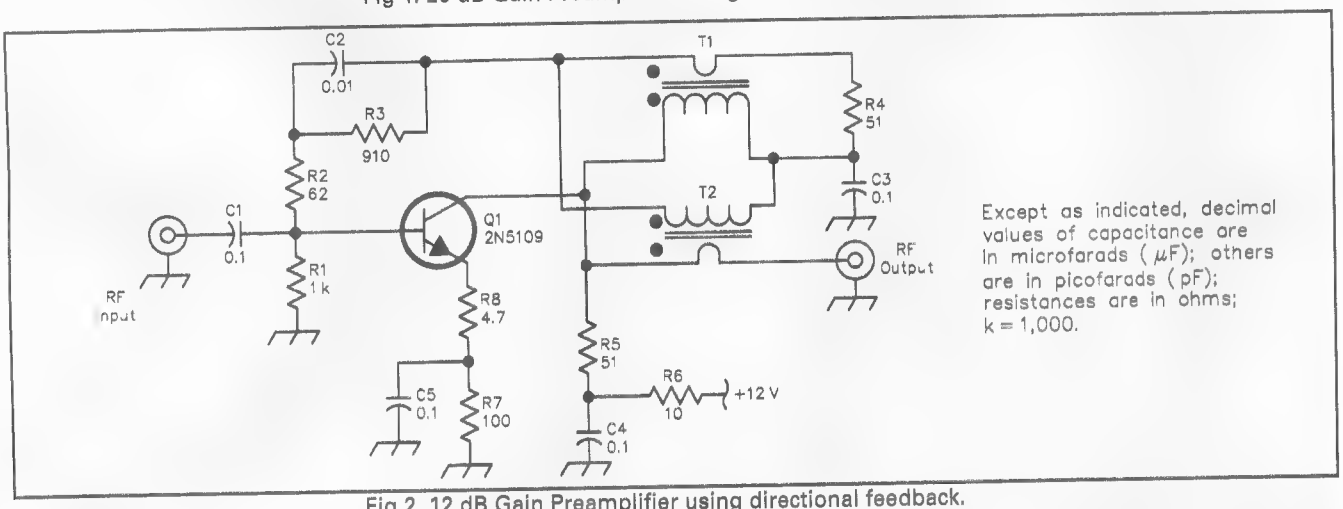


Fig 2. 12 dB Gain Preamplifier using directional feedback.

Short Forty Antenna

The short forty antenna is a shortened dipole which uses a combined loading and matching inductor. This antenna was chosen by Philip T Sage KF8JW as a simple portable antenna for use on a trip to France. The advent of CEPT licencing which allowed US amateurs to operate in many European countries with the minimum of paperwork.

The antenna was described in QST July 2001 by Philip T Sage KF8JW and is an antenna design published in the ARRL Antenna Book by Jack Sobel W0SVM. The antenna described is roughly half size which helped usage from hotel room balconies.

The antenna uses combined loading and matching coils. The loaded shortened dipole uses a pair of loading coils either side of the feedpoint with a coil in parallel with the feed point as a form of hairpin match. The antenna is shown in Fig 3.

The combined loading and matching coil is wound on a 6 inch long piece of 2.5 inch diameter PVC tubing. The coil is 27.5 turns of #14 insulated wire wound the full length of the tube. The winding is tapped at the 12th and 15th turns for the feed point. The wire used was electrical house wiring wire. Similar wire should be locally available. The feed uses 300 ohm twin lead.

The antenna wire used was # 24 solid insulated wire. The dipole uses two 14 ft 6 inch lengths and the wire is hard to see once in the air.

The feed line was 32 ft of 300 ohm twin feed line. At the transceiver end of the feed line a 4:1 balun was used. A 2:1 SWR bandwidth of 7.03 MHz to 7.14 MHz was obtained.

ar

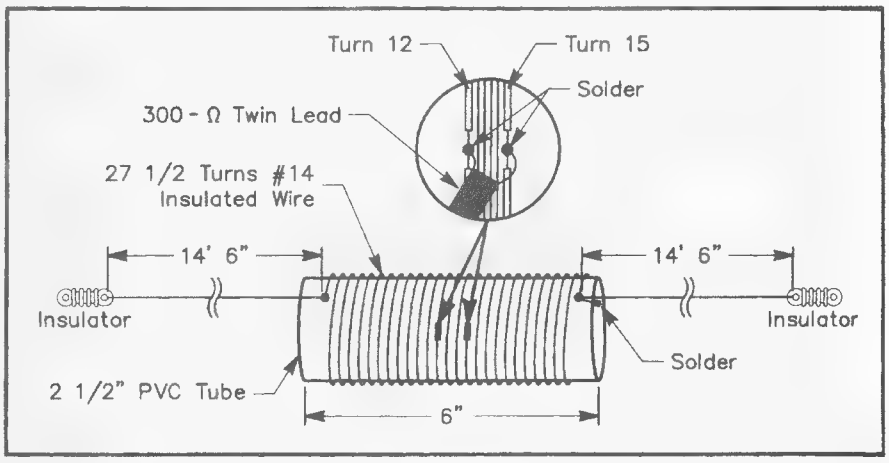


Fig 3. Short Forty Dipole Antenna.

TechNotes

Lindsay Lawless VK3ANJ

Microphone sensitivity

Most dynamic microphones listed in local radio parts catalogues have a "sensitivity" of about –75 db. That means that a sound wave pressure of one dyne per square centimetre (dyne/sq cm) impinging on the microphone diaphragm produces a no load output volts of –75dbv i.e. 75 db below one volt, which is approximately 0.18 millivolts. It is probably better to put the sensitivity as 0.18 mV per dyne/sq cm (One volt/ dyne /sq cm = 0db.)

The accepted RMS sound pressure of conversational speech at a distance of one metre is 0.645 dyne/sq cm, so the –75db microphone will produce an open circuit output of 0.116 mV when used for speech.

Specified sensitivity is that measured at 1000 hertz, it will not have the same sensitivity at other frequencies but in a good unit should be within plus or minus 3db.of the 1000Hz. spec.

The sound pressures quoted above are absolute pressures; pressures quoted in db above a reference level of 0.0002 dynes per square centimetre are used for the same purpose these levels are called Sound Pressure Levels (SPL). A pressure of 0.645 dyne/sq cm is an SPL of 70db.

European manufacturers prefer to use the SI unit of pressure, the Pascal, and microphone sensitivities are quoted in volts per Pa. The Pascal is 10 dyne per sq cm therefore sensitivities in the SI system will be 20db greater eg. –75dbv/ dyne/sq cm = -55dbv/Pa. The reference level for SPL is 0.00002 Pa.

The above information is useful for designers of mic. amps, others "try not to worry about it".

Headphone sensitivity

Headphone sensitivity is the sound pressure output per unit electrical input at 1000Hz. The output pressure units are dyne/sq cm. or Pascal or SPL and the standard electrical unit is the milliwatt. mW SPL is the preferred pressure unit.

A typical dynamic headphone sensitivity is 74db. SPL per milliwatt, which is a sound pressure output of one dyne/sq cm or 0.1 Pa. per milliwatt. 70 db.SPL is the approximate average pressure of conversational speech at a distance of one metre.

The manufacturers should assure purchasers that the rated sensitivity is maintained within 3db over the specified frequency range and that distortion is not perceptible over that range ie. ideally less than 1%.

Headphones should also be capable of an output of at least 84db for speech service and at least 94db for "hi fi".

Another rating which should be specified is the "load rating"- the maximum power input which the unit can accept without risk of damage. 100 to 200 mW is a typical load rating.

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VX-5R pictured showing large frequency digits

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Tiny, yet incredibly rugged, the VX-5R provides 6m, 2m and 70cm amateur band operation with 5W output as standard (4.5W on 70cm), made possible by a unique PA design, super high-capacity 7.2V 1100mA/H Lithium-ion battery, and a diecast metal case. Plus, ultra-wide VHF and UHF as well as medium-wave* and shortwave reception facilities are provided.

Another really useful feature is the large backlit dot-matrix LCD screen that can be configured to suit your operating needs. You can choose large frequency digits, dual line displays (VFO 'A' and 'B' frequencies, VFO 'A' frequency and battery voltage and even VFO 'A' frequency as well as other data such as recent Tx/Rx times or transceiver internal temperature), or even 8-digit alpha-numeric memory labels. All this in a diecast aluminium enclosure just 58W x 87H x 28D mm (w/o knobs or antenna)!

Other features include:

- Tx: 50-54, 144-148, 430-450MHz
- Rx: 0.5-1.8MHz, 1.8-16MHz, 48-729MHz, 800-999MHz (cellular blocked)
- Full feature keypad, CTCSS encode/decode, Digital Code Squelch
- Comprehensive menu system
- Over 200 regular memories, plus 10 pairs of 'Band limit' memories
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- 5 battery saving systems, plus Tx/Rx usage monitor.
- Spectra-Scope™ for monitoring adjacent channel activity
- Comes with FNB-58LI 1100mA/H Lithium-ion battery, flexible antenna and AC adaptor/charger

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*10kHz steps only.

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Ready for action on SSB, CW, AM, FM and digital modes, the FT-847's compact size makes it ideal for a variety of portable/mobile applications as well as for serious base station operation. You get a solid 100W output on the HF and 6m bands, 50W output on both 2m and 70cm, dual fan cooling and a rugged diecast chassis. Plus, the ultra-quiet HEMT receive pre-amp on 2m and 70cm contributes to the FT-847's amazing sensitivity figures. Advanced Digital Signal Processing (DSP) circuitry enhances received signal/noise ratio for easier copy of signals under marginal conditions through the use of 16 selectable noise reduction algorithms, while the Bandpass and Auto-notch filters aid the IF based Shift and Noise Blanker circuits in reducing interference on crowded bands.

The FT-847 is ready for satellite operation, with crossband full duplex operation, normal and inverted VFO tracking of the satellite uplink/downlink, as well as 12 special satellite memories with alpha-numeric tags. Also provided is a low-noise Direct Digital Synthesiser (DDS) that provides tuning steps as small as 0.1Hz, plus there's an adjustable DSP bandpass filter as narrow as 25Hz for exceptional weak-signal CW performance. You can also install optional Collins® mechanical filters in both the transmit and receive chain for enhanced SSB operation, as well as a 500Hz Collins® filter in the receiver side for CW. An effective speech processor with adjustable frequency shift voice tailoring is also provided to add punch to your SSB transmissions. The FT-847 is ready for data modes, with a rear panel Data In/Out socket and a packet socket for 1200/9600 baud VHF/UHF operation. Other features include extended receive operation (36-76, 108-174, and 420-512MHz), a high-speed computer control interface, 10-key keypad for band/frequency entry, and a shuttle-jog tuning ring for fast QSY. Also included are encode/decode CTCSS and DCS operation, selectable channelised steps for FM operation, FM narrow/wide modes for 29MHz use, and a large LCD screen with adjustable backlighting.

Each transceiver is supplied with a hand-mic, DC power lead and a comprehensive instruction manual. Call us for a copy of Yaesu's 6 page colour brochure to learn more about this incredible value 'Earth Station' transceiver.

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DICK SMITH ELECTRONICS

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All frequencies MHz. All times are local.

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Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Linden S Orr	VK1LSO

VK1WI: 3.590 LSB, 146.950 FM each Thursday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

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e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Terry Davies	VK2KDK
Secretary	Pat Leeper	VK2JPA
Treasurer	Chris Minahan	VK2EJ

From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: *http://www.wiavic.org.au*
Fax 03 9885 9298
e-mail: *wiavic@wiavic.org.au*

President	Jim Linton	VK3PC
Secretary	John Brown	VK3JJB
Treasurer	Barry Wilton	VK3XV

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

President	Bill Riis	VK4YCU
Secretary	Bruce Jones	VK4EHT
Treasurer	Bill McDermott	VK4AZM
Office Mgr	John Stevens	VK4AFS

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

Annual Membership Fees. Full $83.00 Pensioner or student $71.00. Without *Amateur Radio* $52.00

VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 0403 368 066
web:*http://www.sant.wia.org.au*
email: *peter.reichelt@bigpond.com*

President	David Minchin	VK5KK
Secretary	Peter Reichelt	VK5APR
Treasurer	Trevor Quick	VK5ATQ

VK5WI: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

Annual Membership Fees. Full $82.00 Pensioner or student $68.00. Without *Amateur Radio* $54.00

VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.vk6wia.org*
e-mail: *vk6wia@iinet.net.au*

President	Neil Penfold	VK6NE
Secretary	Christine Bastin	VK6ZLZ
Treasurer	Bruce Hedland-Thomas	VK6OO

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $67.00 Pensioner or student $61.00. Without *Amateur Radio* $36.00

VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: *http://www.tased.edu.au/tasonline/vk7wia*
also through *http://www.wis.org.au/vk7*
email: *batesjw@netspace.net.au*

President	Phil Corby	VK7ZAX
Secretary	John Bates	VK7RT
Treasurer	John Bates	VK7RT

VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full $85.00 Pensioner or student $72.00. Without *Amateur Radio* $52.00

VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).

VK1 Notes

Forward Bias

Peter Kloppenburg VK1CPK

The guest speaker at the general meeting of September 24 was Olaf Moon (VK1JDX). Olaf spoke about DXing and Contesting. Being very active in these operations over a number of years, he collected much experience in this aspect of the hobby. Supported by an electronic slide projector, Olaf demonstrated the tricks of the trade to increase the average number contacts made and how to stay fresh and alert during nighttime contesting. Many unusual terms and jargon used by Contesters were explained, together with details of where and how to get data on propagation, newsletters, and sudden openings to particular places.

Our Treasurer, Ernest Hocking, (VK1LK), has resigned from the position due to Federal commitments. Ernie is kept so busy with E-mails, snail mail, phone calls, writing reports, and work, that he hardly has time to come to regular meetings. The Committee has appointed a successor to the Treasury by the name of Linden S. Orr (VK1LSO).

Linden is an accountant with many years of experience in finance. We wish her well.

A change is about to occur in the Division's Website. http://www.vk1.wia.ampr.org

A new page, entitled "Speakers Bureau" will be part of the site by the time you read this. This page contains a list of speakers who have spoken to their subject at one of the Division's general meetings in the past, and, in the future. With all Clubs and Divisions participating, the list will be a valuable asset to program organisers, nationwide, looking for speakers on particular subjects. Check it out Folks!

On November 24, 2001 a Trash & Treasure meet will be held in the parking lot of the Scout facility in Farrer, starting at 12.00 pm. The Farrer Hamshack will be open for inspection as well. Rectangular tables (3) can be hired for $10.00 each, on the day. Cars should be parked with their boots facing the centre of the car park. There will **not** be a general meeting on November 26, 2001. The next General Meeting will be held on Monday, January 22, 2002. Cheers.

VK3 Notes

By Jim Linton VK3PC
WIA Victoria web site: www.wiavic.org.au
e-mail: wiavic@wiavic.org.au

Club & group forum

Following on from the success of the amateur radio stand at the Great Australian Science Show (GASS) earlier this year, which brought radio clubs and WIA Victoria closer together, a forum has been called for 15 November.

An invitation has been sent to all radio clubs to attend. It is limited to club presidents or their nominee, and one of other member of each club. The aim is to build on the experience of GASS and provide an opportunity for the informal interchange of information and ideas.

IRLP update

Steady progress is being made in support of the linking of amateur repeaters through the Internet Repeater Linking Protocol (IRLP), and nodes for this are steadily being licensed. It was pleasing to note that IRLP being used for the first time this year during JOTA, and no doubt it will become a permanent feature. In less than a year IRLP has become well established and gaining a reputation for increasing on air activity.

WIA submissions

The WIA has been concentrating on two key issues in recent weeks. The first is the Productivity Commission Review into Radiocommunciations legislation and the role of the Australian Communications Authority, and the draft Spectrum Plan.

Productivity Commission Submission

A detailed submission was prepared by the WIA and submitted to the Productivity Commission. This took considerable effort, but the rare opportunity of such a review could not be ignored.

Among the key points of the submission are that the WIA continues to seek a special operator type licence for the Amateur Service. This is because amateur radio does not fit into the three existing types of licences in the Radiocommunciations Act, the Apparatus, Spectrum and Class. The WIA submission highlighted the educational role and community benefits of amateur radio and called for the Amateur Service to receive formal recognition in Australia. While preparing that document, the WIA has also been busy examining the ACA's draft Spectrum Plan. This is the blueprint for the use of spectrum in Australia, and is infrequently revised. The WIA is considering the opportunities the revision presents, and these include the pursuit of an LF band, clearly labelling 50-52MHz as a future primary allocation, and maybe some issues concerning microwave bands.

Repeater report

Despite some earlier success in getting the South Gippsland repeater VK3RSG back on air, it appears that the inundation of water put an end to it. The site is to undergo the installation of new equipment and other work, and the timing of the restoration of this repeater is uncertain. Another repeater inactive for a long time, Mt Fatigue VK3RGS, is also on a program for works, and likely linking to VK3RSG.

VK4 Notes

Qnews

From Alistair Elrick VK4MV

Co-operative construction

Logan West Amateur Radio & Electronics Club has had a working bee with the Greenbank Scouts. President Peter VK4JPH reports that this joint venture between the Club and the Scouts will see a 33-metre tower to carry antennas and lighting equipment erected. This month also saw an excellent demonstration and explanation of the new IRLP mode now available. Andrew VK4BAB is to be thanked for the presentation. Then next month Ron Bertrand will talk about his most successful Amateur Radio Education Course.

Slow scan up and flying

The Murrumba Communications Group has announced the Groups Slow Scan Television repeater VK4RSS ON 438.575 MHz is now back in service. John VK4ET operates a software based repeater in conjunction with VK4RSS and this can be accessed by sending a 1750 Hz tone through VK4RSS for one second and this will be acknowledged by the letter K in Morse. Upon hearing the letter K transmit your picture within ten seconds and VK4ET's repeater will store the pictures and then retransmit them back through VK4RSS. Pete also thanks Bruce VK4BOO for his expertise in fixing a mysterious fault that developed causing the shut down and inconvenience to fellow users.

Museum to open

On Tuesday the 2nd of October a museum of Radio and Recorded Music was opened at FM Radio Station 4MBS in the Brisbane suburb of Coorparoo. Quite a proportion of the display is from WIAQ Historian Alan Shawsmith VK4SS. This will be well worth a look. Perhaps Radio Clubs could organise an outing to visit the display. The 4MBS programming is first class as well. (Sorry Graham, 4TAB's is great too).

Sunshine Coast on PSK31

Resulting from an initiative by Len VK4ALF, some 25 members of the Sunshine Coast Amateur Radio Club Experimenters Group gathered at the clubrooms last month to assemble PSK31 Interface Kits. Len's six-year-old son Joel successfully completed a kit, which Len reported, worked first time with a contact into VK3. Further projects are planned, but in the meantime watch out for increased PSK31 activity from the Sunshine Coast. The Club is also mounting Amateur Radio displays for the general public at local Libraries this year. Maroochydore will be from 8 October to 20 October. The REDSUN Rally this year between the Redcliffe and Sunshine Coast Clubs will be organised by SCARC President Dave VK4KDL and Olga will set the observation rally course and hide the Fox. The date is Sunday 25th of November. The rally will start from the Southern Car Park, Ettamogh Pub 10.00am, finishing at the clubrooms at Godfreys Road, Bli Bli. SCARC are also planning a foxhunt, Ron VK4GZ will organise this starting from the clubrooms at 10.00am, Sunday 28 October. Busy time on the coast it seems.

Silk screen printing

The Townsville Amateur Radio Club (TARC) have many and varied activities. One of the latest was a session printing T-shirts with the silk screen method. All this fun was had at the West End SES HQ. President Og (Gavin) VK4ZZ led the printers and Wallaby Bob wielded the Squeegee. Just about anything not nailed down was a target for printing by the sound of it and marks were given for outstanding efforts during the day. Sounds like a great way to have walking billboards advertising Amateur Radio and your Club. They are also getting ready for the Cyclone season and it might be a good idea for others in the rest of the State to do the same. Remember we should always be able and available to help with communications if disaster should strike. So charge all those batteries now.

73's from Alistair

VK7 Notes

QRM

An interesting piece of history has surfaced – brought to light by Bob, VK7KRR. The original application and the licence documentation for out first Tasmanian repeater, VK7RAA, was displayed at the October meeting of the Northern branch. It shows that the licence was issued on the 21st October 1971 which makes this year the 30th anniversary for this very reliable repeater. All our main repeaters are on mountain tops around the state – this one is at about 1500 metres on Mt Barrow, just east of Launceston.

Our southern branch members are rekindling their interest in ATV. Kim, VK7DY, has built up two 1.25gig antennas and is presently waiting on a transmitter kit for this frequency. More news to come on this. Their November meeting is a visit to the Communications room of the Tasmanian Fire Service.

The Tasmanian office of the A.C.A. has relocated to the second floor of 147, Macquarie St. Hobart – previously they were on the ground floor. All "peripherals"- phones etc remain the same.

The first transmission in the Southern Hemisphere using the Marconi system was between Tasmania and Victoria in 1906. Transmitters and antennas were set up on the foreshore at Devonport and Queenscliffe and it was the hot news item of the time. While this was 5 years after Marconi's first transmission across the Atlantic the Northwest branch is anxious to commemorate the 100th. anniversary of the transatlantic transmission by setting up a station on the original Devonport site in collaboration with the Devonport Kite Club. Due to the fact that Kite club members have problems with the closeness to Christmas the date at this stage could be Sunday afternoon, December 9th. Early pictures show a box kite being used but there is apparently a query about this. We would like to hear from any other club planning a Marconi celebration. E-mail to the writer at Ron.Churcher@tassie.net.au would be appreciated. A fax to VK7RN at 03 64246830 will also suffice.

Cheers for now, Ron, VK7RN.

Robin L. Harwood VK7RH

The world tunes in to terroism

On the 11th of September at approximately 1247 UTC, the first of several momentous events happened in the city of New York, when a jetliner crashed into the North Tower of the World Trade Centre. Just a very short 18 minutes later, a second plane crashed spectacularly in the South Tower. This was captured on video from several locations. After this second crash, it quickly became apparent that this was the result of a major terrorist action. Whilst President Bush was confirming this, a third plane hit the nerve centre of American military power, the Pentagon. A fourth aircraft crashed into a rural location, apparently as the result of the passengers overpowering the hijackers.

I was holidaying on Queensland's Sunshine Coast and listening to shortwave was the last thing on my mind. I was awakened by my Mother at around 6 am (2000 UTC) and told that 10,000 people had been killed from two planes that crashed into a skyscraper. I did not fully grasp the information and in my befuddled state, I tried to turn on my insensitive "Digitor" multiband radio. I eventually found the ABC in Brisbane on 612 kHz and had it quickly confirmed. I then alternated between it and the VOA on 17740 kHz.

I was summoned to the TV and to the full scale of the horror and carnage. All the TV stations were carrying live coverage, many with CNN. We sat transfixed for the entire day. I did notice even the small Brisbane community station on channel 31 was at times carrying the BBC World and even video from the VOA studios in Washington.

Tuning across the dial, it quickly became clear that the BBC World Service had pre-empted their regular programming into one stream. This continued for the next two days. The news from NY so dominated the news that it was the sole topic covered in all forms of the media and still does. The reaction to this horrendous event quickly altered the shortwave with major broadcasters introducing extended programming particularly to Iran, Afghanistan and Pakistan. This is the region that the US says is the source of the terrorist group they claim was responsible.

The security of military and civilian aeronautical communications was firmly tightened. The various utility lists also stopped posting military loggings in case these groups could use information. A united worldwide coalition of governments sprang into being, primarily led by the US, to combat terrorist actions.

Attention also turned to Afghanistan. About 90% of the nation is controlled by a hard line Islamic group known as the Taliban, which has strictly imposed a literalist interpretation of Islam. This regime has actively supported the terror group led by a dissident Saudi individual known as Osama Bin Laden.

The only shortwave- broadcasting outlet the Taliban regime had was a very erratic sender, ironically within our exclusive allocation on 7 MHz.

In a few short weeks, the world has changed and once again shortwave has come into its own.

The Kabul regime is extremely suspicious of any electronic technology, with television and the Internet banned. It is forbidden to take film or photographs of any living being; broadcasting music is prohibited so official information plus Islamic teaching is the only fare available.

The sender is very erratic and is nominally supposed to be on 7200 yet is around 7085. They have been reported as being on around 1530 UTC with several short news bulletins including English. However there are some clandestine stations also operational around here at the same time, mostly backing the Kurds in northern Iraq. The Taliban station is known as the "Voice of the Sharia"

There is another faction in the northern part of Afghanistan, controlled by a disparate coalition of anti-Taliban forces, which was under the control of an equally bloodthirsty individual – General Masood. Just two days prior to the WTC outrage, he was assassinated while recording a television interview. They too have a small shortwave-operation yet reports state they mainly utilize FM stations plus a television station.

Naturally the Americans were going to launch a retaliatory counter-attack and have managed to obtain support from many nations in a grand coalition against terrorism. This brought together many former adversaries in a common cause. But it also has led to increased tension and suspicions particularly within the worldwide Islamic community. It has been very interesting to follow developments and opinion on shortwave from countries such as Iran and Pakistan. Israel has also been the focus of attention.

As I was compiling this month's column, the counter strike was launched on the 8th of October, when American and British air power commenced bombing airports and suspected terrorist bases within Afghanistan. My receiver is tuned both to the BBC World service and also on known US HF military frequencies. I shall also be paying attention to Middle Eastern broadcasts from Israel, the United Arab Emirates, Pakistan as well as Radio Tashkent in Uzbekistan. Another key and firm ally has been Russia and they too are worth monitoring.

I would not be surprised if the antiquated radio facilities in Kabul on 7085kHz have been destroyed but that is yet to be determined. The Northern Alliance Afghanis may also appear over shortwave and are likely to be on the tropical band allocations of either 60 or 90 metres. There are reports that the US will be employing radio psychological warfare units but these are likely to be short range and probably on MW or FM.

In a few short weeks, the world has changed and once again shortwave has come into its own.

Keep listening for the unexpected and 73- Robin L. Harwood VK7RH

AMSAT

Bill Magnusson VK3JT

PCsat, Sapphire and Starshine successfully launched

The "Kodiak Star" mission was launched from the Kodiak Launch Complex in Alaska at on 2001 Sep 30 02:40 UTC. The Kodiak Star payload included the APRS-equipped (Automatic Position Reporting System) PCSat, built by students and staff from the U.S. Naval Academy under the guidance of Bob Bruninga, WB4APR. PCSat is a 1200/9600-baud APRS digipeater designed for use by amateurs using hand-held transceivers or mobiles. Bob reported that PCSat successfully separated and immediately began transmitting 1200 baud AX.25 AFSK telemetry on 145.825 MHz. As of 2001 Oct 03, PCSat had been enabled for user access.

On the same launch with PCSat were the Starshine-3 and Sapphire payloads. Starshine-3 is a 'mirror ball' similar to Starshine-1. The satellite is equipped with AX.25 9600 baud telemetry on 145.825 MHz. Sapphire has 1200-baud AX.25 telemetry and a voice replay on 437.100 MHz. Signals from both PCsat and Sapphire have been reported from all over the globe and many visual sightings of Starshine have been noted. So far I have received no reports of signals from Starshine's 2 metre beacon. Odd signals have been heard on the shared frequency of 145.825 MHz and these may indeed have come from Starshine.

All three satellites are orbiting very close together and this situation will continue for some time. Only when sufficient separation has occurred will NORAD be able to get an accurate radar fix and finally determine which is which. This is a common happening on multiple launches. Some weeks could elapse before the true identities of the individual birds will be known.

I'm writing this on the evening of October 10th and on this evening's passes of PCsat the closest match to its actual position were the keps for Starshine. The PCsat keps were over 5 minutes out. It certainly looks like they have these two objects transposed in the list.

PCsat signals loud and clear over Australia and New Zealand.

Since the launch of PCsat some friends and I have been liasing on HF and tracking the satellite on 2 metres. We all use the program, UIview, to capture the data and display the locations of the digipeating stations. Hopefully when the satellite's GPS system is fully operational we should also be able to track it on the large area maps while it transmits its own position using APRS frames containing lat/lon co-ordinates. Although I haven't witnessed it myself, some reports are to hand of this being done already from time to time.

PCsat is primarily aimed at mobile and portable APRS stations, allowing them to digipeat their latitude and longitude position(s) so others can track their movements in real time. This can be done on a suitably scaled map which can vary from showing all of the world, down through smaller quadrant maps showing S.E Asia (VK and ZL and the island to our north) or on maps showing fine detail down to state-wide or metropolitan level and even local main roads and streets. Very great accuracy indeed is possible if a GPS receiver is coupled to the transmitting gear of the mobile station. In fact, the accuracy of your map will be the limiting factor. I recently watched as a mobile station in VK4 moved across a street map of Brisbane and suburbs. He was transmitting his position every minute or so via PCsat.

It's a bit like an amateur radio version of the "Intergraph" system used by our Police and Ambulance services to track their vehicles and patrols. Most large centres of population in Australia already have an enthusiastic group of amateurs, promoting APRS activities, who have established themselves on VHF or UHF. Many of these groups maintain links via the Internet and if packets are suitably addressed they can be digipeated via this medium too.

UIview can be downloaded from the 'Peak Systems' web site in England. To listen in and watch the activity on this exciting aspect of satellite operation you just need a standard terrestrial packet setup on 2 metres – 1200 baud – AFSK. A good all-sky antenna such as an outdoor-mounted ground plane with a mast-head pre-amp will return loud signals for most of each pass. If you can make your packet station mobile or portable you can take full part.

Make contact with your local APRS group. I'm sure they will already be aware of and using PCsat and be able to help you along the way. Some of the newer range of radios come with the capability for packet radio decoding and display built-in. One of these would greatly simplify your portable/mobile setup and would be suitable for taking outdoors, perhaps even on walking trips.

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000UTC with early check-ins at 0945UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900UTC with early check-ins at 0845UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
GPO Box 2141,
Adelaide, SA. 5001.

raham's email address is:
vk5agr@amsat.org

One of the prime aims of PCsat is to provide a means of monitoring for emergency communications. The software allows your digipeated frames to include a short message, perhaps even a request for assistance. Bob Bruninga has put in an heroic amount of work in developing the APRS system over the years and now his involvement in the PCsat project has crowned these achievements. He and his team of midshipmen at the USA Naval Academy are to be congratulated on the stunning success of this very ambitious project.

For more information, visit the PCSat web site at:

http://web.usna.navy.mil/~bruninga/pcsat.html

Sapphire data an be found at:

http://ssdl.stanford.edu/aa/projects/squirt1/sapphire_overview.html

Starshine information can be found at:

http://www.azinet.com/starshine/

The above information was gleaned from Amsat News Service bulletins.

We live in exciting times

While going through some old 5 inch floppie disks recently, I realised that the first AMSAT column I wrote was over 10 years ago! Perhaps a moment to reflect on this would be appropriate.

I took over the job from Maurie Hooper VK5EA in October 1991. Some excerpts from that first column: Oscar-17 (DOVE) was nearly two years old and was showing the first signs of the instability, which was later to claim it. Oscar-16 (Pacsat) was blazing the way with new protocols and modulation methods which have gone on to spawn a new generation of digital amateur satellite communications. Today's 38k4 birds owe a lot to those heady days.

Dr Karl Meinzer had startled the amateur radio satellite community with his suggestion of putting an amateur radio transponder on a Mars rocket. He's still doggedly working on this one.

It was very interesting to read that the best telemetry decoding and display software available was still DOS based written by the University of Surrey team. Again from Surrey, their latest offering UoSat-14 was taking up the challenge set by PacSat and offering CCD earth image downloads at 9600 baud using the revolutionary new "broadcast-protocol" which went on to pave the way for Chris Jackson's famous WiSP program and a whole new era in digital satellite comms for amateurs.

We can look back at all that has happened in the meantime and at recent developments like 38k4 download speeds from the UoSats and the move deeper into the microwave region with AO-40. Who would have dreamed 10 years ago of a satellite with 24 GHz capability? – The phase 3d development team did, that's who! We certainly live in exciting times.

Club News

Adelaide Hills Amateur Radio Society

The September meeting for AHARS was enlightened about stepper motors by Jim VK5JST. It is amazing what these simple and clever devices can do. The variety of number of steps etc of which they are capable also opened a number of eyes.

With stepper motors being used in most computers they are readily available from disposal stores so it is very likely that some of the applications we were shown will be tried out by the AHARS members in future projects.

It so happened that a visitor had his telescope (onto which he has added a stepper motor as a star-follower) in his car. He brought this part of the mechanism in at the end of the meeting as another practical demonstration to add to those Jim had shown us.

If you are in Adelaide for the third Thursday of the month, do come along to the Blackwood High School at 7.30. All are welcomed

AHARS also has an informal luncheon on the second and fourth Friday of the month at the Blackwood RSL. The group that gathered a couple of months ago appears in the photo.

QSP new club established

The BASS IRLP Group was formed at Rosebud on Monday 27th August.

The aim of the club is to promote amateur radio. It will provide help and encouragement to both established and beginner amateurs, with special help in the use and operation of IRLP.

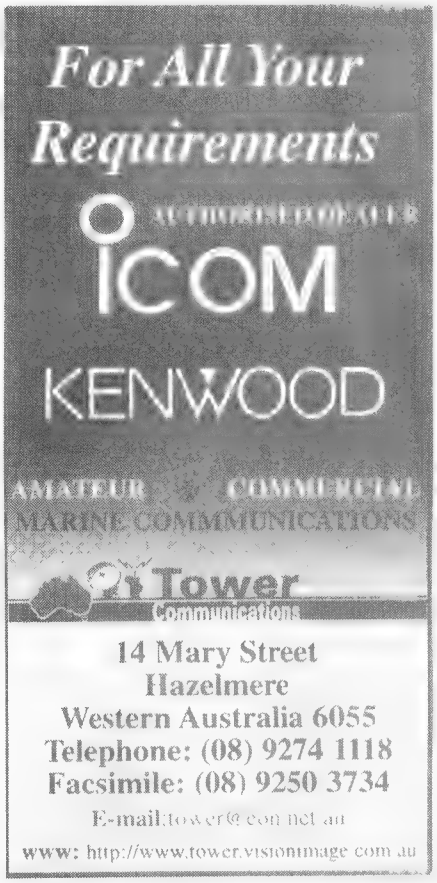
The Group currently has a simplex node on 146.475 MHz. Eventually the IRLP will be fitted to the Arthurs Seat repeater site on 439.725 MHz.

Club details:

Address BASS IRLP Group
PO Box 368
Rosebud Vic 3939

Phone/fax Graham VK3JBO 5982 0315
Neil Bright VK3TNB 0418 101 927

E-mail nbright@bigpond.net.au



Contests

Ian Godsil VK3VP

Contest Calendar November 2001 — January 2002

Nov	1-7	HA-QRP Contest		
Nov	3	Spring VHF Field Day		(Oct 01)
Nov	4	High Speed Club CW Contest		
Nov	4	NZART Straight Key Night		
Nov	9-11	Japan International DX Contest	(SSB)	
Nov	10/11	WAE RTTY Contest		
Nov	10/11	OK/OM DX Contest	(CW)	
Nov	17/18	LZ DX Contest	(CW)	
Nov	17/18	All Austrian 160m DX Contest	(CW)	
Nov	17/18	IARU 160m Contest	(CW)	
Nov	24/25	CQ WW DX Contest	(CW)	
Nov	24/25	CQ WW SWL Challenge	(CW)	
Dec	15/16	ARRL 10 Metres Contest	(CW/SSB)	
Dec	15/16	10 Metres SWL Contest		
Dec	15	OK RTTY Contest		
Dec	15-16	Croatian CW Contest		
Dec	15-16	International Naval Activity	(CW/SSB)	
Dec	26	Ross Hull Memorial VHF Contest begins	(CW/SSB/FM)	(to Jan 13 2002)
Dec	29	RAC Canada Winter Contest	(CW/SSB)	
Dec	29	16th Internet CW Sprint Contest		
Dec	29-30	Original QRP Contest	(CW)	
Dec	29-30	Stew Perry 160 Metres Distance Challenge	(CW)	
Jan	12/13	Summer VHF Field Day		

Greetings to all readers. Summer is a-coming, so now is the time to get the VHF gear out and tuned ready for the Spring and Summer Field Days and the Ross Hull Memorial Contest.

I am pleased to be able to bring you some results this month. Details below.

As I said last month, it is most upsetting to see so few participants and logs submitted for our own contest events. I think that the time may be approaching when the whole area of contesting in VK may need to be put under the microscope. However, as you will see from the results below, not only are local events not being well-patronized, but some of the really interesting and achievable world-wide contests do not attract logs from VK/ZL either. I suspect that some of these events attract participants, but there it stops. I know that I have asked *why?* previously, so shall not do so again.

Contests that are for RTTY and PSK31 are just as interesting as the CW/SSB types – and I hear chaps talking on the air about how they are "getting into" PSK31, so there must be many of you now equipped and experienced to try your hand in an alternative-style contest. Please think about it!

On the other hand, not everything is negative. I am most pleased to see some new Callsigns in the results below, e.g. John VK5NJ, Alex VK2KET and Garry VK7JGD. This is most encouraging and I hope that they will develp their interest during 2002. Congratulations and thanks to each of you.

Final reminder about the VHF Spring and Summer Field Days. The dates are in the Calendar, so please get them into your diaries NOW! Look forward to working you — (makes a good change from Christmas shopping and worrying about how to pay for it all).

Good contesting and 73, Ian Godsil

Results Pacific 160 Metres Contest 2001

A total of 20 logs was received for this year's event. My sincere thanks to everyone who took the trouble. Your efforts were much appreciated.

Conditions were not favourable between ZL and VK this year; nevertheless, some lucky (ie well-set-up) stations made a fair showing. A number of ZL stations heard some DX but could not work it. Full details are listed below.

I commend the effort of Bob VK3ZL in both modes. As you know, Bob is a well-known and very experienced 160m operator who reaps the benefit of a well-designed antenna system.

I also commend the efforts of newcomers John VK5NJ and Alex VK2KET. John is becoming known for his successes in VK/ZL contests and often operates QRP. Alex, on the other hand, is solely QRP working around 2-3

watts and learning of the enjoyment to be had in reaching for CW signals. My sincere thanks to each of you, as to everyone else, and please call again next year. In fact I look forward to hearing you ALL again in 2002.

Whilst writing about participants, I am sorry to report that newcomer John VK3ET was taken ill about half an hour into the contest and had to call for an ambulance. John had contacted me some time before the event and expressed great interest in this contest and in getting back onto 160 metres after an absence. We hope that you are now feeling much better, John, and many thanks for at least sending a Check Log.

73, Ian Godsil VK3VP Contest Manager

Section	Place	Call	Name	Score
MIXED	1	ZL3REX	Rex	1170 points
	2	VK5GN	Martin	670
	3	W8JI	Tom	385
	4	VK3ER*	EMDRC	266
	5	VK3YE	Peter	210
	6	VK2AVQ	Bob	125
SSB	1	VK7CK	Frank	336
	2	VK3ZL	Bob	175
	3	ZL1BRY	Hector	168
	4	VK7JGD	Garry	95
	5	ZL2DW	David	42
CW	1	VK3ZL	Bob	1312
	2	VK3BKU	Don	638
	3	VK2QF	Nev	306
	4=	VK2AYD	David	60
		VK3VP	Ian	60
	6	VK5NJ	John	44
	7	VK2KET	Alex	16

CHECK LOGS VK6HD VK3ET Thank you.
*EMDRC operators: VK3s XOR NM FT SRB WWW

Statistics:

Logs by postal mail—Mixed 5, SSB 4, CW 3, Check 2
Logs by e-mail—Mixed 1 SSB 1, CW 4
Total—20

Results Novice Contest 2001

From Ken Ramplin VK2UTC, Contest Manager

Sadly, only four logs were received this year, so some serious thinking will have to be done. Anyway, thanks for the support from the four of you. 73, Ken, VK2UTC

Susan VK7LUV 32 points.

Keith Howard VK2AKX Trophy for Novice with highest phone score;

Certificate for top-scoring Novice in VK7 and Certificate for highest phone score.

Garry VK7JGD 29 points SSB section;

Lloyd VK2VZB 18 points Clive Burns Memorial Trophy for Novice with highest CW score and Certificate for top-scoring Novice in VK2;

Ian VK3VP 50 points Certificate for highest CW score.

Results CQ WW RTTY WPX Contest 2001

Single Operator, All Band, Low Power
VK4UC 241,490 points

Results 2001 Commonwealth Contest

From Bob G3PJT, Contest Manager

Open Section–Oceania-Results (Q/B)

Pos	Call	80m	40m	20m	15m	10m	Total	QSOs	BCAs
6*	ZL4CC	12/11	108/40	257/55	218/48	205/55	8062	800	134
9*	VK4EMM	13/13	73/37	237/54	197/44	169/42	7209	689	111
11*	ZL6QH	36/22	98/29	224/52	168/37	149/46	7080	675	105
15*	VK2AYD	12/12	44/28	243/52	175/32	115/37	6150	589	99
16*	ZL1MH	21/16	55/35	149/41	165/38	112/45	6006	502	101
19*	ZL2BR	12/12	30/26	156/47	166/32	84/45	5474	448	99
26	ZL2AZ	22/18	63/32	88/31	53/31	52/35	4328	278	92
56*	VK6HQ		21/15	135/33	35/26	22/5	2598	213	48
58	VK2YN	8/8	14/13	83/33	55/19	10/10	2503	170	55
61*	VK3ZC	7/7	24/22	47/30	17/17	8/8	2181	103	57
63	VK2EL		12/12	53/28	35/18	16/15	2011	116	48
65	ZL2TX		23/13	92/36	10/10		1901	125	35
71	VK2DID		12/12	30/22	8/8	11/11	1341	61	43
73	VK4XW		3/2	24/18	25/9	13/13	1152	65	28
78*	VK8HA		4/4			46/28	886	50	22
79*	VK5HO	1/1	15/14	8/8	7/7		736	31	22
81	VK3KS			22/21			519	22	13

** Certificate of Merit*

Restricted Section

Pos	Call	80m	40m	20m	15m	10m	Total	QSOs	BCAs
4*	VK2BJ	13/13	66/28	146/37	145/30	113/36	5287	483	93
9*	VK6VZ	16/10	65/15	170/37	120/19	133/27	4642	504	72
10	VK2APK	9/9	30/27	207/40	94/30	45/28	4587	385	85
16*	ZL2CD	8/8	30/20	77/30	95/26	36/31	3501	246	70
25	VK6AJ		6/5	121/32	40/21	104/22	2922	271	53
30*	ZL1HV	4/4	15/14	39/29	34/26	24/24	2514	116	67
44*	VK5GN	2/2	6/6	23/21	54/23	60/14	2012	145	49
49	ZL1AIH			12/11	28/23	29/26	1535	69	41

** Certificate of Merit*

HQ Stations

Pos	Call	80m	40m	20m	15m	10m	Total	QSOs	BCAs
1	VA3RAC (VE3KZ)	75/22	172/39	250/59	242/45	228/40	8861	967	99
2	GB5CC (GM3WOJ)	103/17	142/32	194/58	186/53	145/45	7923	770	115
3	VK4WIA (VK4TT)	9/9	28/25	168/39	101/32	104/39	4887	410	87

Checklogs from G3HAL, G3KXF, G3SXW, G3TXF, G3WP, G3XMM, G8DR, ZL2AOH, ZL2RX and ZL2ZLW are gratefully acknowledged.

ResultsWaitakere Sprints 2001

The tenth running of the Waitakere Sprint was held on the 29th August (SSB) and 5thSeptember (CW) with reasonable conditions on both nights. I had the impression on the night, that numbers were down, but scores seem to be as good as in previous years. From the logs we learn that 110 stations exchanged numbers in the SSB contest and on CW, 70 stations were active.

With 59 logs received (although down from 72 last year) the sprints are still very popular. But where are all the operators in ZL3 land. One operator asks 'Has CW been banned in ZL3' ?

We would like to take his opportunity to congratulate the winners in the various sections. John VK5NJ scooped the pool this year with overall wins in both SSB and CW, and is again the Sprint Champion. First ZL on SSB was John Elvy ZL2BAY and Paul Slako ZL1PC, will receive the Special framed certificate donated by VK5NJ for the highest score ZL in the CW contest.

We at Branch 03 hope that you enjoyed the contests and we thank you for your participation we hope you will join us again next year.

Waitakere Phone Sprint 2001

Call	Points	Area	Certificate
VK5NJ	56	vk	1st Overall
VK5SR	41	vk	2nd VK
VK4SN	29	vk	3rd VK
VK3DYL	20	vk	
VK4FJ	20	vk	
VK5ET	6	vk	
ZL1ALZ	45	zl1	1st ZL1
ZL1UF	43	zl1	
ZL1OS	40	zl1	
ZL1WT	38	zl1	
ZL1UTE	36	zl1	
ZL1BRY	34	zl1	
ZL1JL	34	zl1	
ZL1TW	34	zl1	
ZL1UD	34	zl1	
ZL1BVK	33	zl1	
ZL1ACZ	32	zl1	
ZL1WI	32	zl1	
ZL1ASZ	24	zl1	
ZL1VRR	18	zl1	
ZL2BAY	46	zl2	1st ZL2
ZL2AJB	43	zl2	
ZL2AWH	40	zl2	
ZL2BRS	40	zl2	
ZL2ADN	35	zl2	
ZL2FE	28	zl2	
ZL3GL	26	zl3	1st ZL3
ZL4IM	32	zl4	1st ZL4
ZL4HD	13	zl4	
ZL4OZ	12	zl4	
VK2LCD	47	swl	

Check logs gratefully received from:-
ZL1AKY ZL1ALK ZL1MW

Waitakere CW Sprint 2001

Call	Points	Area	Certificate
VK5NJ	33	vk	1st Overall
VK4SN	21	vk	2nd vk
VK2QF	19	vk	3rd vk
VK3VP	14	vk	
VK3BBT	13	vk	
VK5DC	11	vk	
VK5ET	2	vk	
ZL1PC	29	zl1	1st ZL1
ZL1ALZ	28	zl1	
ZL1AIH	27	zl1	
ZL1BYZ	25	zl1	
ZL1TW	25	zl1	
ZL1WI	21	zl1	
ZL1ASZ	18	zl1	
ZL1WT	18	zl1	
ZL1UD	12	zl1	
ZL1ACZ	11	zl1	
ZL1BVK	9	zl1	
ZL1UF	5	zl1	
ZL2AJB	27	zl2	1st ZL2
ZL2ADN	22	zl2	
ZL2BIF	22	zl2	
ZL2AVL	17	zl2	
ZL2CB	17	zl2	
ZL4IM	11	zl4	1st ZL4

Combined Phone & CW Sprint Champion VK5NJ Score

Call	CW	Phone	CW +Ph	(x 2)
VK5NJ	56	33	89	178
ZL1ALZ	45	28	73	146
ZL2AJB	43	27	70	140
ZL2ADN	35	22	57	114
ZL1WT	38	18	56	112
ZL1WI	32	21	53	106
VK4SN	29	21	50	100
ZL1UF	43	5	48	96
ZL1ACZ	32	11	43	86
ZL4IM	32	11	43	86
ZL1ASZ	24	18	42	84
ZL1BVK	33	9	42	84
VK5ET	6	2	8	8

10 Metres SWL Contest

Sat 15 December – Sun 16 December
0000z Sat – 2359z Sun

Object: For all SWL stations to log DXCC countries, USA states and Canadian provinces on 10 metres only. No time restrictions. However, listeners may only log three stations from DXCC, US state or VE province. District of Columbia counts as a state.

Sections: Single Operator CW or Single Operator SSB. *Note:* Use of DX- or Packet Cluster not allowed.

Logs must show date; time UTC; callsign of station heard; exchange at SWL's QTH; DXCC, State or Province. (RS(T) must be at least 33(9).)

Callsign of station being worked is not required.

Score: five points for first station in each DXCC country, US state or VE province. Second station scores two points and third station three points.

Final Score will be total of station points X number of States and Provinces X number of DXCC countries heard.

Send logs by 31 January, 2002, by mail to: Lambert Wijshake, Kattedoorn 6, 8265 MJ Kampen, Netherlands. Logs may be sent by e-mail to: <nl10175@amsat.org>

NZART Straight Key Night

From Barry ZL1DD, Contest Manager
Sunday, 4 November, 2001
0800z – 1100z

Polish and lubricate that old morse key and enjoy an evening of old time radio fun. An activity night in which everyone can be a winner with a certificate to prove it.

When: First Sunday in November 2000-2300 NZST. 2001 = 04 November.

Band: 80m (3.5 MHz) only

Mode: CW sent with STRAIGHT KEY ie characters formed manually, no system of automatic dots, dashes or spacing permitted.

Divisions: Vintage QRP, Vintage QRO, Open QRP, Open QRO.

Explanation: Vintage: Receiver and transmitter or transceiver using valves, no solid state devices in the signal line permitted. QRP: 5 watts or less rf output.

Exchange: RST/ QTH/ operator's name (one word)/key used (e.g. ZC1, P&T)/ TX type (eg ZC1, FT1000, homebrew)/ TX power (watts).

Scoring: 1 Point per QSO. Stations may be worked once, CW to CW only. All stations submitting logs MUST use a straight key throughout, but straight key stations may QSO stations using bugs, electronic keyers or keyboards.

Multipliers: Vintage QRP multiply total points x2, Open QRP multiply x 1.5, Vintage QRO x 1.2, Open QRO x1.

Final Score: Total QSO points X totals multipliers.

Logs: Suggest using standard NZART log pages (not contest log sheets). Each log QSO entry to show: Time (NZST or Z), callsign, RST, QTH, name, key type, tx type, tx power (of station worked).

Logs to have associated data sheet giving entrant's: name, callsign, QTH, age (optional), full description of equipment used ie key, tx/rx, tx power, antenna.

Send logs by e-mail, mail, fax, ON OR BEFORE 20 NOVEMBER to: Barry Kirkwood ZL1DD, 66 Cory Rd, Palm Beach, Waiheke Island 1240, Ph/fax 09 372 5161. E-mail: <bjk@ihug.co.nz>

All who send a log will receive a certificate. Special certificates to top three in each division. Annotated certificates e.g. Best ZC1, Youngest/ oldest op, etc., at manager's discretion.

Any photos of operators and/or equipment gratefully received.

Henry G Andersson, VK8HA, VK8 IW Co-ordinator

The federal IW co-ordinator has not yet been appointed by the Federal WIA VK8HA, our VK8IW co-ordinator was nominated by the VK5/8 division and seconded by the VK4 division and the nomination was tabled at the September 2001 federal meeting.

The Indon pirates on 14 megs have been moved to some extent from below 14100 to above 14100. There are stil 3 or 4 persistent fone patches which do appear now and again below 14100, but they do leave when told to do so.

The 'arecheay headhunters' around 14100 have also been dealt a blow by the Indon army who had a 'clean-up'

The 24890-24990 OHR at Howard Springs near Humpty Doo, will be checked out when new federal co-ord has been appointed.

In the meantime, please keep up the good work in IW and if you like to send your reports to VK8HA, it will be included in the VK8 monthly report to our reg.3 co-ordinator, Arasu, VU2UR.

Cheers and all the best from: Henry, VK8HA, Box 619, Humpty Doo NT.0836
vk8ha@octa4.net.au

International Amateur Radio Union, Region 3

Monitoring systems newsletter. September 2001.

All the members of monitoring systems of region 3 offer our heartfelt condolences to the family members of those killed in the attack on world trade towers, and to those families of officers of police and fire services of new york, who lost their lives while helping in the search and rescue of the victims.we highly appreciate our american brethren amateur radio operators, who have been managing the disaster communications.

The region 3 coordinator, heartily welcomes the nomination of OM Yang BA7JA of CRSA, who has been asked to organise and work on the monitoring systems work of CRSA. This is a very important addition to the existing ms group of the Region 3. we hope OM Yang will be very active in compiling MS reports, trying the unidentified Chinese speakers and deal efficiently through the crsa to get the non-amateur stations of Chinese origin, off our frequencies. I have been in touch with him regarding the items of interest to both of us and have requested him to look into items which are periodically reported as coming from China, in our monthly newsletters. His e-mail ID is ba7ja@hellocq.net for those interested.

Till the nomination of a federal MS coordinator from WIA is announced, I am utilizing the reports received from OM Henry VK8HA and OM Tom VK4BTW for the general information.

We had queries about the stations with data bursts on 20m band and the regular carriers at the lower edge of the 20m band.

For a query from OM Chen BA1HAM, in August 2001, regarding the data bursts on 14180 kHz heard in his area, reply from MS coordinator of R2, says that Region 2 has observed 4 channels with 400 hz separation and also heard on 14302.1 kHz from 1100 to 1300 UTC. Reply from international coordinator says that China's military has been heard on the other frequencies like 14206,14122,14042,14116,14182 kHz with similar data signals. these signals are operating for over a year and deciphering has not been possible. But, beam headings have indicated China. The other comments from Australian area by om Henry VK8HA is also included in the detailed report.

The frequency of 14042 kHz has been studied in detail and found to contain 4 channels at 500 Hz spacing sending data at 2.7 sec intervals, similar data transmissions have been noted on other frequencies as well. The FFT softwares used and the graphic views obtained are very useful in identifying if the station is VFT or not.

OM Chris G4BOH reported that the carriers on 14000 kHz was from Amman and the other on 14001 was from The Hague, as per his observations.

73, all the best.

compiled by:
B I Manohar "Arasu" VU2UR.
Regional Coordinator.
vu2ur@lycos.com

IARU Monitoring Service WIA

VK4 Summary For August 2001.

VK4 Co-ordinator Tom Walker, VK4BTW
QTHR : 13 Bothwell St., Toowoomba Qld. 4350 Australia

FREQ	DATE	UTC	EMM	DETAILS
3.560	0308	1050	A3E	Radio Pyongyang, N.Korea
14.0032	0108	0900	N0N	Carrier all day, occasionally some F1B
14.026	1907	0055	WBD	Multi-channel data
14.0584	1707	1130	J3E/u	2-way non-Amateur
14.060	2407	1145	J3E/u	Asian voices non-Amateur
14.0617	1707	1130	xxx	Tunable noise
14.1335	2307	0900	R7B	Strong data signal 'de Europe'
14.140	3018	0726	F1B	RTTY, 2 baud rates used
21.420	0408	0430	A3E	"Christian Voice", spur of 21.680 MHz from complex near Darwin.

dennisa@hypermax.net
Thanks, Tom

VK8HA Intruderwatch Report For August 2001

FREQ	DATE	TIME	MODE	COUNTRY	IDENTIFICATION & REMARKS
03560	3008	1030	A3	N.korea	Pyongyang broadcast. Big Signal!
14085	1608	1030	A1	?	FSK-CW-4 Letter/Fig Groups 330 Degs. Ib6,Vvv,Msg Ga,Ap Ga = A3ta +++++++++
14057	1608	1038	N0n	?	Some packet.also CW 8SKT in 360 Degs
14041	1608	1039	Pkt	China?	Bursts of pkt daily in 330 degs
14100	1708	1230	Ssb	Papua	Pidgin English in 30 degs
14010	1808	1115	Ssb	?	Not Indons. Kabul Mentioned At Times. 330 degs
14075	2708	1030	F1	?	Ui Tty. Closed At 1005
14280	1708	1200	A3	N.korea	Pyongyang.same As 7140
14301	2808	1205	?	?	'The Daily Dits' sending couple of dits per second on a daily basis!

14320	2808	1200	Pkt	China?	Intermittent bursts of packet
14295	2808	1210	F1	?	Multichannel
14280	2808	1210	A3	N.korea	Pyongyang broadcasting
14250	2808	1220	A3	N.korea	Pyongyang broadcasting
14142	2808	1225	F1	?	Multichannel
14125	2808	1230	Ssb	Indonesia	Indon pirates
14122	2808	1232	Pkt	China?	Chinese jamming Indon pirates!
14180	3008	1030	Pkt	?	Strong stn in 320degs.Weak stn in 300degs daily obs
14025	3108	1245	M7b	?	Multichannel in 315 degs..also heard via Longpath to Europe aprox 135 degs.with reduced signal strength
14250	3108	1300	A3	N.korea	Pyongyang broadcasting
14280	3108	1300	A3	-"-	-'-
18080	0108	1216	Ssb	Indonesia	Indon phone patch
18074	0708	1200	Ssb	India	Indian J3E similar to 18075
18076	1608	1020	Ssb	?	Chinese almost daily
18075	1608	1025	Pkt	India	Daily packet
21257	1008	1115	Xxx	?	Sounds like Habana Moon numbers stn
24890	3108	1220	A3	?	Weak broadcast station too low for ID

The 14180 packet stations were checked out from Humpty Doo, PH57NK, VK8HA.

The strong station is in aprox 320 degrees from here and the weak station is aprox in 300 degs. The line 320 degrees goes thru Darwin-V8-HS-Burma A5-S2-Northern VU-bottom China-Afghanistan-UA3 near Moscow.

The 300 degrees line goes thru Southern Borneo/ Kalimantan-Singapore-Malaysia-India-Saudi Arabia-Suez-Libya. They do not transmit at the same time Txing stops end of message waiting for reply from Rxing station. It looks like it could be a link between Afghanistan and Libya

This kind of packet does not seem to be self correcting

Cheers from VK8HA
in Humpty Doo
aprox 50km SE of DARWIN

Technical Abstracts

Gil Sones VK3AUI
30 Moore Street, Box Hill South, Vic 3128

Digi Box

There are a number of programs which use the sound card in a PC to provide generation and decoding of a variety of modes such as PSK31, MFSK16, MT63, Hellschreiber etc. These need the sound card to be interfaced to your transceiver. In Radioamatoori July 2001 two interface circuits were presented by Harri Laakso OH2LFV. Similar circuits have appeared in various publications and on the internet. There are also commercially available interfaces.

The two circuits differ in the provision of isolation between the PC and the transceiver. Isolation may be required to freedom from a variety of problems however in some situations the simpler circuit without isolation may suffice. The simpler circuit in Fig 1A. is the minimalist approach.

The circuit in Fig 1B. provides transformer isolation of both audio lines together with opto isolation between the PTT line and the computer serial port. This will minimise any problems of connecting a PC to a radio transceiver.

The composite parts list for both Fig 1A and Fig 1B is as follows :-

R1 2K2
R2 5K pot.
D1 1N4148
D2 1N4007
LED1 LED colour to suit.
IC1 4N25 Optocoupler.
TR1 2N2222
C1 4M7 35VW tantalum electro.
T1 & T2 600:600 Ohm audio transformers.

Note Components are for Fig 1A & Fig 1B so some may not be required in the version you build.

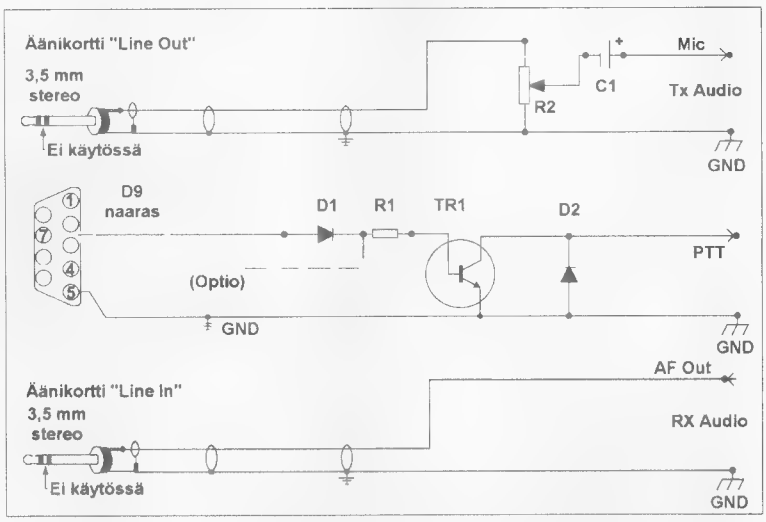


Fig 1A. Standard DigiBox.

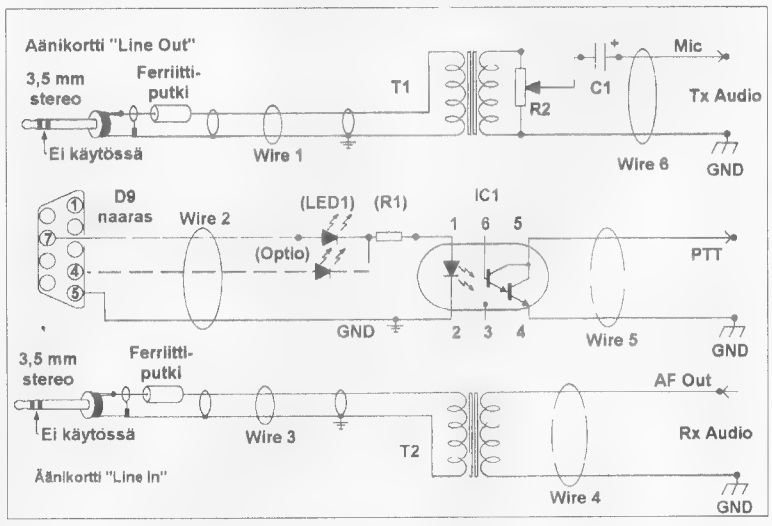


Fig 1B. DigiBox Deluxe.

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email Vk3wac@aol.com

Drawing nations together

The recent terrorist attacks in the USA claimed the lives of a number of fellow radio amateurs, most of whom died while at work either in offices or as technicians/engineers manning the various radio and television transmitters located on the upper floors of the towers.

Their deaths are ironic; the international goodwill engendered by the hobby of amateur radio has in the past brought us closer together as a global community.

But unfortunately there are others whose aim is to drive communities apart for their own reasons. We must not let them succeed. By continuing to communicate with our fellow amateurs from all types of cultures and backgrounds, we will be promoting peace and understanding. Our condolences go to the bereaved families and friends, and also our hopes that we can rid ourselves of the destructive forces of terrorism.

The summer in the northern hemisphere has ended and if the propagation reports are right then conditions are set to improve dramatically for our summer. Six metre reports from Europe indicated strong signals into and from the USA; hopefully we will have some good conditions here as the sun rises higher. Those of us with rigs equipped with six metres should have them at least monitoring the calling frequencies, or if your rig is able to, set it to scan across the lower portion of the band. This would be an easy way to keep a watch for DX openings. The 10, 12, 15 and 17 metre bands should also show strong improvement, but unfortunately, 160 and 80 metres will suffer from the usual strong QRN from storms. Still, the cycle is in decline so it's all downhill for the next five years or so.

The DX

9U5, BURUNDI. Gus, SM5DIC, has renewed his 9U5D Burundi license. He plans to travel there in mid-November and stay over until March 2002. Gus says he will be using simple equipment and wire antennas, except on 6m and 2m (a 17 el yagi), so we should not expect big signals from him. He says he will be looking for 2m EME contacts. [TNX SM5DIC and The Daily DX].

C6, BAHAMAS. Ed, K8EP, plans to be active as C6A/K8EP between the 20th and 27th of November. Main activity will be on CW and SSB. He will also compete in the CQWW CW Contest. QSL via K8EP. [TNX K8EP and OPDX]

CE, Chile. Sergio, IZ6BRN (ex VU3CUR, AP2WAP, 9N7RN) has been resident in Chile for the past six months and expects to be there for the next two years or so. He is active on the air as CE3/IZ6BRN and only operates on 12, 17 and 6 metres. QSL via home call. [TNX IZ6BRN and 425 DX News]

FG, GUADELOUPE. Robert, N4CD, hopes to be active as FG/N4CD from the 15th until the 30th of November. He intends to be active on all bands using CW and SSB. QSL via N4CD (call book address) or via the bureau. [TNX N4CD and OPDX]

FS, SAINT MARTIN. Ann, FS/W2AZK and Brian, FS/KF2HC hope to be active from Saint Martin (NA-105) from the 26th of Nov until the 2nd of Dec 2001. They will use SSB and CW on all bands between 40 and 10 metres; operation on 80 and 160 metres will take place if circumstances permit. Antennas will be simple wire antennas and perhaps a vertical dipole. Address QSLs to their home calls direct or via the bureau. [TNX KF2HC and 425 DX News]

HC8, GALAPAGOS ISLANDS. Jon, N0JK, will be accompanied by a group of operators on his return to the HC8N station on San Cristobal Island in the Galapagos. He intends to operate from here from the 20th until the 26th of November 2001. They are also planning to take part in the CQ WW CW Contest. Activity will take place on HF as well as 6 and 2 metres, they also hope to get some satellite work in too. No mention of QSL routes, perhaps details will be released nearer the time. [TNX N0JK and OPDX]

KC4, ANTARCTICA. Jim, WA2EUJ, who has been active as KC4USV while working at McMurdo Stations radio communications gear has mentioned that he will be on the air as often as possible over the next few months. Jim is one of several operators at KC4USV, and the station has been worked often on or around 14203, 14250 or 18130 kHz usually after 0000z and until as late as 0800z. QSL via K1IED [TNX WA2EUJ and OPDX]

KP2, VIRGIN ISLANDS. Dennis, K7BV hopes to be active as NP2/K7BV from St. Croix in the Virgin Islands (NA-106) from the 21st until the 25th of Nov 2001. He also plans to participate in the CQ WW DX CW Contest as WP2Z concentrating on the 15 metre band. Dennis has a website at http://www.qth.com/Windwood if you want further information. QSL routes for both callsigns, WP2Z and NP2/K7BV, is via KU9C. [TNX K7BV and 425 DX News]

LS2, VERDE ISLAND, ARGENTINA. The Radio Club Mar Del Plata (LU2DT) plans to operate from Verde Island from the 23rd to the 25th of Nov 2001 using the callsign LS2D, the first time the call LS2D has ever been used. Verde Island is situated in the Atlantic Ocean about 65km (40 miles) south of Bahia Blanca, Argentina. The group has suggested a list of frequencies of operation; these are as follows, CW - 3510, 7005, 14020, 21020, 28020 and 50110 and SSB - 3680, 7080, 14190, 21290, 28400 and 50110 kHz. No QSL details mentioned but assume via LU2DT. [TNX LU2DT and OPDX]

KH0, SAIPAN, NORTH MARIANAS. JF2SKV will be operating as NH0S from here from the 22nd until the 26th of November. He will be operating on all HF bands as well as 6m. QSL via JF2SKV. [TNX JF2SKV and The Daily DX]

VP5, TURKS & CAICOS ISLANDS. Word from Ed, WA3WSJ, that he will be operating as VP5ED from the 20th until the 27th of November. He is the proud owner of a completed K2 kit transceiver and intends to give it a good shake down on air, he also hopes to work other amateurs who owners of K1 and K2 transceivers while operating as VP5ED.

Ed says that if you need a VP5 QRP QSO then this will be your big chance. QSL directly to WA3WSJ (call book address) with a SASE [TNX WA3WSJ and OPDX]

XU, CAMBODIA. A group of French operators comprising Yves, F5TYY; Alain, F6BFH; Jacqueline, F6EGG and Bernard, F9IE hope to be operate from Cambodia from the 22nd of Oct until the 10th of Nov 2001. They plan to operate on all bands 80 to 6 metres on CW and SSB using two IC-706mkII's. Antennas will be simple dipoles. Hopefully they will also be able to fit in some operation from Koh Poah (AS-133) sometime during this period. Alain, F6BFH, will be using XU7ABW, while the licences and callsigns for the others will be collected when they arrive. A special cup will be offered to the person having the most QSOs on the most bands. QSL is via home calls, either direct or via the bureau. [TNX F6BFH and 425 DX News]

Special Events

For the military/maritime types the following should be of interest:

International Naval Contest. This year the International Naval Contest will be sponsored by the Italian Navy Old Rhythmers Club (INORC). Activity will take place from 16.00z on the 15th and 16th of Dec 2001. This year will see naval clubs from a number of countries participate, including stations from the Australian Naval Amateur Radio Society, the Belgian Maritime Amateur Radio Society, the Finnish Naval Amateur Radio Society, the Marine Amateur Radio Club Netherlands, the Marine Funker-Runde, the Royal Naval Amateur Radio Society, the Romanian Marine Amateur Radio Club and the Marine Funk Club Austria. Further details and information can be obtained from Alberto Frattini, I1QOD by dropping him an E-mail at i1qod@inwind.it [TNX I1QOD and 425 DX News]

DXpeditions

ZL amateurs from NZART branch 33 will be mounting a trip to **Whale Island (OC-201)** for a little fun and 'radioactivity'. The group intends to be active on all HF bands. Operation will take place over the 23rd until the 26th of November. Whale Island is a located some 16km offshore from Whakatane. The island should not be confused with a larger island called White Island that is home to an active volcano and located to the northeast. Whale Island is currently under the management of New Zealand's Department of Conservation; hence access is very limited with strict controls in place for those who are lucky enough to obtain permission to land on the island. A special callsign, ZL6WI, has been issued for the operation.

An announcement from the Pitcairn Island Amateur Radio Association tells us that it will undertake an **IOTA DXpedition to Ducie Island**. Operations are planned to begin at 00.00z on the 16th of Nov 2001. The DXpedition will run three separate stations that will be on air around the clock. The leader is Tom Christian, VP6TC, a well known operator and president of PIARA. Other team members team are VP6DB, JA1BK/VP6BK, JA1SLS/VP6BB, JF1IST. Three other operators are yet to be confirmed. This will be an international DXpedition, aiming to provide worldwide coverage for this rare IOTA (OC-182). The team plans to have the logs uploaded onto the Internet via satellite for checking. The team's description goes "Ducie Island is located 360 kilometers from Henderson Island (the nearest land) and surrounded by waters of 3000 metres in depth. It is the easternmost atoll in Oceania and is rarely visited. Because of the remoteness of the island conventional transportation is not available, and an adequate size boat is needed to make the journey. Arrangements have been made for a charter, and landing permission has been obtained for the date selected. However, due to ecological concerns, only one group may be on the island at a time."

To make it easier to locate, a station will operate around the clock on 15 metres, 21.020 MHz for CW and 21.295 MHz for SSB. The Pitcairn Island Amateur Radio Association says it has applied for membership of the IARU. The application has been approved by Region III and forwarded to the IARU full membership for final approval. Yaesu (Vertex Standard), Create Design and Suzuki Motors are providing support. The QSL Manager will be Garth Hamilton, VE3HO, and the Pilot station will be Dr. Bill Avery, K6GNX. [TNX JA1BK/VP6BK, VP6TC and The Daily DX]

Round up

HA, HUNGARY. A special call HG50HSC will be on the air from Hungary to commemorate the 50th anniversary of the High Speed Club. A website is available at http://www.hsc.de. The operators HA3OV, HA3NU, HA1AG and others, are all members of the Hungarian HSC. QSL is via HA1AG and E-mail requests for bureau cards are welcome at ha1ag@compuserve.com [TNX HA1AG and 425 DX News]

Allan Mason, VK2GR has let me know that he will be operational from the **Solomon Islands at Atoifi on Malaita Island**. Allan and his XYL will be working at Atoifi hospital, and hopes to get on air between his official duties. Allan intends to be active using CW and PSK31 and possibly SSB mostly on 20 metres, but will try and get some time in on 15 and 40 metres as well. Dates of operation are from the 15th of October until the 30th of November 2001. Allan also says that WARC bands are not permitted using the issued H44MA licence. H44MA QSLs via VK2GR (QTHR). [TNX VK2GR]

ZD9IR is the call for Chris DeBeer, better known as ZS6RI, for the next 12 months while he is stationed on **Gough Island (IOTA AF-030) in the Tristan da Cunha Islands**. Chris plans to be active on 160 to 10 metres using CW, SSB and RTTY. Currently he is running 100 watts to a dipole but hopes to erect a beam for 20 – 10 metres as well as more efficient wire antennas for the low frequency bands. QSL to ZS6EZ. [TNX ZS6EZ and The Daily DX]

A note in The Daily DX reveals that *the recent activity from 8Z0A has been a pirate.* "8Z0A has been somewhat active over the last few weeks. 8Z is a Saudi Arabian prefix. The person using this callsign has been giving HZ1TA as the QSL manager. HZ1TA is the call of Saudi Arabian Prince Talal Al Saude, brother of King Fhad. The prince has been out of the country for several years and HZ1TA has be QRV by second op Ahmad Bukhari. Sulaiman Al Jedaei, 7Z1SJ, contacted Ahmad, who reported he has no knowledge of any operations of 8Z0A. Ahmad, who is an old timer (90+), does occasionally operate the HZ1TA station. Sulaiman agrees that 8Z0A must be a pirate". [TNX 7Z1SJ and The Daily DX]

Sources

As usual thanks go to the following: VK2GR, SM5DIC, K8EP, IZ6BRN, N4CD, KF2HC, N0JK, WA2EUJ, K7BV, LU2DT, JF2SKV, WA3WSJ, F6BFH, I1QOD, VP6TC, JA1BK/VP6BK, HA1AG, ZS6EZ, W1JR, NZART branch 33, 425 DX News, OPDX and The Daily DX.

David A. Pilley
davpil@midcoast.com.au

A young Amateur shows the world what she's made of

During the month of September it was hard to find new editorial to write that did not concern the disaster in the USA. The news was tragic, but from this disaster came a comradeship that has not been unsurpassed within our fraternity. The loss of N2SJ, WA2ACW, KA2OTD, AA1GO, KA2KET and KA2DRF at the WTCs and W3HRD at the Pentagon will be a lingering memory for many, but on the lighter side you have to be impressed with 10 year old Beverly Holtz, who received her licence, KC2IKT, a few days after the tragedy and immediately volunteered to join the hundreds of hams helping in the rescue communication fields.

Using her dad's hand-held transceiver, Beverly relayed health and welfare traffic continuously for 8 hours. Over 300 hams volunteered their services during this tragic event and many more offers were declined. Most of these worked under the umbrella of SATERN (Salvation Army Team Emergency Response Team) located at strategic positions around New York City and Long Island. I had a long QSO with K2TV on the Empire State Building who witnessed the tragedy and I admit, even on CW, it made me feel deeply sad as I read the transmission.

New UK Foundation Licence

The U.K. is going through a 'New Look' vogue with licencing undergoing big changes. Besides lowering the Morse code speed for full licences, they have introduced a new entry licence known as the Foundation Class licence. Their Novice licence will now be known as the Intermediate Amateur Radio licence.

The new Foundation licence will provide access to most amateur radio bands with a restriction on power of 10 watts. Equipment has to be commercially manufactured. Weekend study is all that is needed.

(from RSGB web site)

CQ Contest Magazine Closes

CQ Contest magazine has put out its last issue. Publisher Dick Ross, K2MGA, says the magazine, in publication for almost six years, has been losing money for the past several years, and the decision to cease publication with the October issue was strictly a business decision. The content for the ham radio niche publication will be absorbed into "CQ". "CQ's dedication to the contest community is in no way diminished," Ross said in "A Message from the Publisher" in CQ Contest's final edition. All CQ Contest subscribers will be converted to CQ subscribers or have their CQ subscriptions extended on a dollar-for-dollar basis, starting with the November issue of CQ. In his "The Band Edge" editorial in the October issue, CQ Contest Editor Bob Cox, K3EST, says the magazine's legacy might be carried forward in the form of a Web publication to serve the contesting community. The demise of CQ Contest leaves National Contest Journal—published by ARRL—as the sole hard-copy magazine aimed at the Amateur Radio contesting community.

No problem with QRM—Go Laser!

For over 30 years a competition has taken place in the southern part of Germany called "The Bavarian mountain day " or in German "Bayrischer Bergtag". The competition was created to get more activity and improve the design of portable equipment for higher frequencies.

During the recent winter event (February 2001) one contact had been made using a frequency of 75 tHz, or a wavelength of 630 nm. Homebrew equipment had been used, built by Hans H. Cuno, DL2CH. The signal was produced by a 5mW laser. Frequency modulation was used to modulate a 60 kHz AM sub carrier. The distance between both stations were 1.2 km and after initial testing the power of the laser has been reduced to 1 mW. However, one hurdle had to be overcome, how to line up the laser towards the RX. A telescopic sight solved the problem. This contact was not a world first, but proved that there is still some room for homebrew equipment in some areas before the appliance industry takes over. If you can read German and you are on the net, have a look at www.hhcuno.de

(from CQ-DL 5/01 via VK4BDQ)

LF Across the Pacific

Last month it was interesting to read of the VK-W QSO on in the 165-190 kHz band. Now again in September the ZLs do it again. On September 22, five ZL stations and one VK station collectively transmitted in the LF band. VE7SL in British Columbia managed to obtain an ARGO capture (*What's a ARGO capture?)*, of both frequencies of the DFCW *(dual-frequency CW)* signals from ZL6QH. The uniquely coded transmission consisted of repetitive sending of the letter "Q" with elements being of 120 second duration the transmission distance is circa 11,709 km.

(from ARRL News letter)

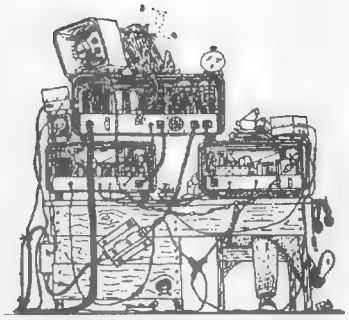
Help! Computer crash!

ERIC FITTOCK, the Contest Manager for the JOHN MOYLE FIELD DAY, has advised that due to a computer breakdown, logs for the 2001 event which were submitted by email have been lost. He asks that entrants who sent electronic submissions please do so again to either of these addresses —

email to: esr@powerup.com.au
mail to: Eric Fittock, 108 Queensport Road, Murarrie, Qld., 4172

Ham Shack Computers

Alan Gibbs, VK6PG
223 Crimea Street, NORANDA WA 6062
Email: vk6pg@tpg.com.au



Part 8: *Rotor-EZ* Review

This month features a delightful weekend *Rotor-EZ* kit project from Idiom Press (1) in California by adding some "high-tech" solutions to your trusty old Ham M, II or Tailtwister antenna rotator from CDE, Hy-Gain or MFJ.

The writer has always dreamed that one day his Ham Shack Computer would control the beam rotator by a simple "click" on the screen. Some would suggest a gimmick perhaps, but once tried – you will **never ever** return to the old way of holding down the break and a direction lever then watch the meter wander around until the desired direction has been reached. Meanwhile, another elusive DX station has got away. With computer control, the beam seeks the direction of the DX while you get on with the real business of calling and working the DX station.

Called *Rotor-EZ*, the kit is used to upgrade the shack control unit, and comprises a small printed circuit board and all the components needed to complete the task in a leisurely weekend constructional project. The Rotor-EZ "clever" features include:

Manual Mode: The rotor controls are used manually just as they did before the *Rotor-EZ* mods were made.

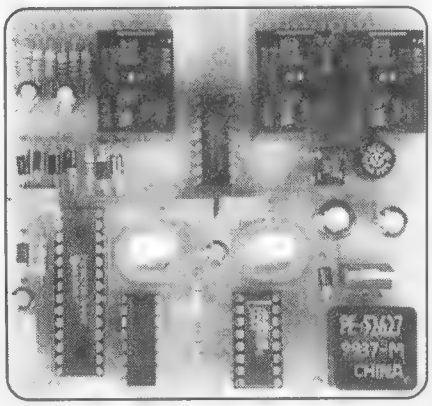
AutoPoint Mode: The original front panel calibrate pot (now called **pointer**) is adjusted to the desired direction on the meter, then a touch on the break lever sets *Rotor EZ* to seek and stop at the "pointed" direction.

Computer Mode: Using one of the popular logging programs like *YPlog* (2), a "left double click" on the Mercator Sun map will move the beam to the desired short path direction. "Right double clicking" the rotator moves to the long path.

Ordering

The writer ordered the *Rotor-EZ* kit (with RS232 options included) via a secure transaction page on the Internet (1). Delivery came within two weeks, well packed, and marked "*Amateur Radio Parts*" on the customs docket. Excitedly, the contents were checked from the component list, and the following weekend was earmarked for construction and installation.

Construction



The small *Rotor-EZ* printed circuit board (shown above) is designed to fit onto the two threaded studs of the meter. The board is silk screened, has plated through holes, and masked to make the job easy to assemble. A small soldering iron and a magnifying glass is recommended to ensure there are no solder bridges, and all the joints are sound. Idiom Press includes assembly instructions, which should be followed carefully and slowly to avoid errors. Once the board has been built and installed on the back of the meter, wiring and modifications are then made to the original rotator control box. Some mechanical work is required to drill four _ inch holes in the front panel for status LEDs. This should be done **FIRST** to allow clearing of any metal cuttings and general cleaning up to be done. Again, carefully follow the kit assembly instructions in the order given and your "home brew" assembly will be an enjoyable constructional experience.

Hints and Tips

The original control box wiring is modified to incorporate the *new Rotor-EZ* features. The writer's 30 year old CDE rotator used twin-flex for the power cable, a fuse in the neutral wire, and a switched the live wire! This is **NOT ACCEPTABLE** in Australia – or anywhere else in the world for that matter! This was fixed by fitting proper three-core mains flex, correctly earthing the green/yellow wire to the chassis, adding a simple EMC/VDR mains input filter, and wiring the switch and fuse correctly in the brown live mains input wiring. All power-input connections were sleeved and insulated for safety reasons.

The writer added three 16 pin DIL sockets (DSE P4160) ensuring that any IC could be changed if problems were experienced in the future. In addition, G3MXJ (5) suggests adding 3000pf ceramic bypass capacitors between pins 3 and 7 on the rotor screw terminal block and earth. This is done to avoid any possible RF from interfering with the new solid-state rotational circuitry in *Rotor-EZ*.

Calibration

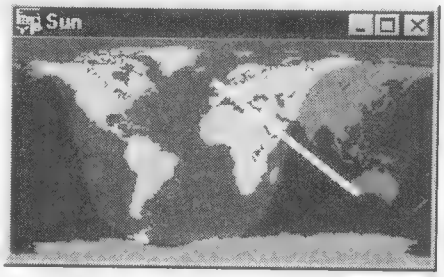
Before final testing and calibration of *Rotor-EZ*, ensure that your rotator motor and the beam assembly are pointing in the right direction. Use a compass or known landmark(s) to check this accurately. Connect the newly modified control unit to the eight-core rotator cable and switch-on. The green control LED should illuminate. Next, follow the calibration instructions and adjust each of three PCB mounted pre-set potentiometers until the meter readings correspond with the correct beam direction. This process is done in the **Manual Mode** by operating the paddles just like you did before the modification was made.

Next, try the **AutoPoint Mode** by moving the calibration potentiometer to a desired direction, then tap the Brake Switch. Watch the green status LED change to orange, the meter (and beam) starts seeking your new direction, the status LED slowly changes to green as the destination is reached. A few seconds pause and the brake LED illuminates, the rotor brake is engaged and you are there. Whilst the beam is in motion, either the clockwise or anticlockwise LED will also illuminate to tell you which way around the rotor is turning. Very nice!

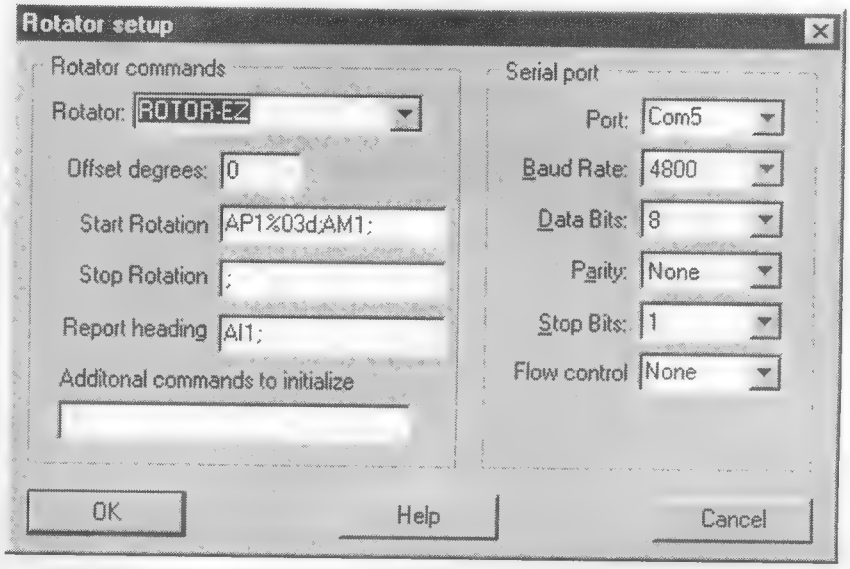
Options

The *Rotor-EZ* offers several options that can be disabled by inserting links on the PCB. These include dealing with the dead spots on the rotor motor potentiometer, a programmable unstick routine where the motor is pulsed in the opposing direction for one second. This overcomes problems when the brake wedge becomes jammed. End point excludes the last five degrees at the scale ends to also avoid jamming which is a common problem with the Tailtwister. Overshoot control cuts motor power three degrees before the set point. Here the rotator coasts to a stop, then after five seconds, the brake engages. This process reduces the mechanical stress on the rotator prolonging its lifespan. Jam protection detects the situation when the system refuses to turn. The firmware detects this and cancels the command. Lastly, the offset mode manages antenna systems that are 90 degrees offset from the main beam. All of these modes are enabled in the *Rotor-EZ* default condition and the writer suggests **they all stay that way** to prolong the life of your value added new rotator system.

Software



YPlog (2) supports *Rotor-EZ*. Simply "double click" the destination on the Sun Map shown above and *Rotor-EZ* does all the hard work for you!



The YPlog rotator setup menu is shown above with the default values already part of the software package. Other commands are offered for the Hy-Gain DCU1, and Idiom Press has announced the development of a *Rotor-EZ* kit for Yaesu rotator users.

G3MXJ (5) has tested the system with DX4WIN, and two contest programs – CT and TR, and they all worked perfectly. In the writer's case, it took just 60 seconds to configure the YPlog software and become fully operational.

Availability

Via the Internet is the best way to purchase *Rotor-EZ*. You will receive an email confirmation within 24 hours, and Idiom Press is there if ever you need support, advice and spare parts. The cost is US$99.95 for the basic kit or US$129.95 including the RS232 options that are essential if you are to do the job properly. Add US$10:00 for shipping by airmail from California. *Rotor-EZ* is good value and will give enormous pleasure to your newfound "high tech" AR activities.

Ham Tip No. 8

Imagine a rare and much wanted IOTA DX station with an unusual callsign prefix. You don't know which direction the beam should be pointing. Enter the call in *YPlog* and select **Control+B**. Now start calling him whilst the beam automatically heads in the right direction. Now that's real productivity!

Ham Shack Computers, Part 9 – ComPorts. At long last! Next month explains the long awaited solution to installing and running extra computer RS232 Communications Ports without those annoying IRQ conflicts and lock-ups in Windows and Linux computers.

(1) Rotor-EZ at Idiom Press: www.idiompress.com

(2) VE6YP Logging and Control: www.nucleus.com/~field

(3) Ham Shack Computers, Part 3: *Amateur Radio*, June 2001. p48.

(4) QST Magazine. April 2001. p34.

(5) RSGB *RadCom*. May 2001. p46.

(6) Ham Shack Computers Web: www.tpg.com.au/users/vk6pg

73s de Alan, VK6PG

VHF-UHF

AN EXPANDING WORLD

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Phone: 0403 368 066 AH ONLY

All times are in UTC.

Oscar 40 heard on 24 GHz in VK!

Colin VK5DK reports on what looks like the first reported reception of AO40 on 24 GHz in VK and maybe the Southern Hemisphere. *Just a short message to let you both know that Trevor 5NC and myself both heard AO40 on 24 GHz on 5/10/2001 for about three quarters of an hour with signals up to a good 6-7db above the noise with quite deep QSB. Trevor was using a 600mm dish and I was using a 400mm dish. Conditions were very cold with clear sky and very damp atmosphere. Time of hearing signals was from about 11.50 UTC. ...* Colin VK5DK

Colin VK5HI comments further *Good news on the reception of AO-40 on 24 GHz. So you can appreciate how the system works the Middle Beacon runs at a level of +10 dB. Consequently all other signals in the passband should be 10dB down on the beacon, otherwise LEILA is activated.*

LEILA is an anti-alligator system that detects strong signals notches the signal out and sounds a "siren" tone on the frequency.

Currently LEILA is only active on the U Band uplink. L band is not a problem at this point in time.

At apogee with minimal squint I can trigger LEILA with 25 watt into a 9 x 9's circularly polarised on Mode U, which suggests a pretty good Rx on board AO-40. From what I understand the Mode L Rx is a touch deaf. Cannot speak from experience. Here on 2.4 GHz I copy the Middle Beacon at a level peaking 25 dB above my reference, which is cold sky noise. At 60,000 kilometres MB is 20 dB above Tcoldsky. Colin VK5HI

Weekend DX at Burnie (VK7 that is!)

Andrew VK1DA reports on his recent operations from Northern Tasmania. The following is an extract from several of Andrew's reports.

On 16/10/01 operation was from Table Cape just west of Wynyard. Rob VK3EK assures me this is located in QE29. Arrived on site around 6:30 and was on air at 7:00, worked 3AFW, 3FMD, 3EK on 2m. Then 3AFW, 3FMD, 3EK on 432 and Rob advised that my signal on 432 was distorted. I observed odd behavior on the RF output, suggesting there was an incipient oscillation, presumably RF induced. This may have been due to being about 12 ft from the antenna. Changing the microphone did not change anything, but the effect was sensitive to the position of the mike, supporting the theory it was due to RF in the "shack". I was operating from the back of the Suzuki rather than the front seat used yesterday. There may have been slightly better shielding from RF by the body of the car yesterday but today the back door was wide open to the antenna.

Then between 2147 and 2240 worked 3HY, 3II, 3AUU, 3KEG, 3KAI, 3DMP, 3DUT, and 3CGR. Paul 3CGR is in the east near Rob 3EK and first worked on 144 SSB 15/10/01 so it was a "plus" to give him a contact to VK7 on his second day using the low end of the band.

At 2250 I was considering packing up as the band seemed fairly dead and the noise from Channel 5A TV was continuing. Then I felt the first drop of rain, so that decided it. Within a minute the wind had come up from 20 knot to about 40 in gusts, several items were picked up by the wind, like the blue tarp that I had been standing on at the back of the car. I packed up in bursts, when the rain seemed to ease, but still managed to get drenched in the fairly icy rain. The wind was still blowing strong when I drove away from the site at about 2330....

On Saturday 22/10/01 morning Trevor 5NC and I did hear each other, on both phone and CW, but we didn't complete a contact. Conditions were OK but I believe the contact would be even more feasible in summer with one of those nice highs across the pond. Thanks to all the operators who came up on 144 and 432 (and one on 50 MHz) to work me. It was great fun Andrew VK1DA/P7

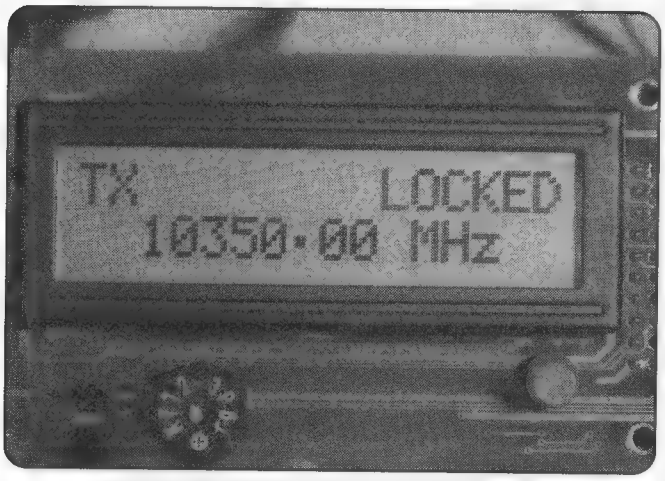
50 MHz is still happening?

Reports on 50 MHz activities have been few and far between perhaps indicating that this equinox has not been traveling as well as the last few.

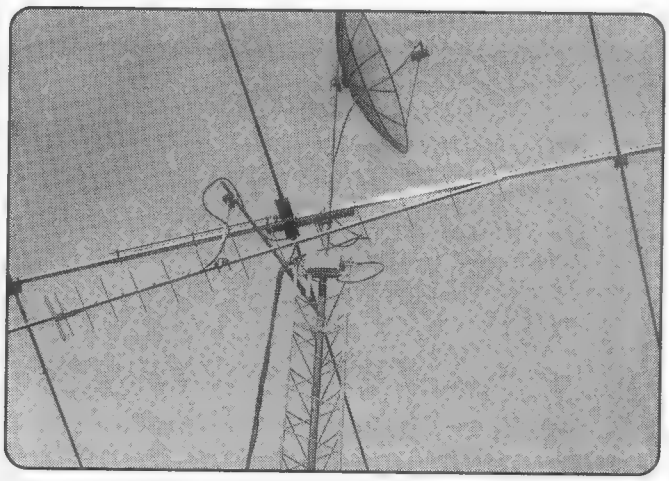
From space weather news ...SOLAR FLARE: A powerful X-class solar flare erupted Monday morning, Sept.24th. The explosion hurled a spectacular coronal mass ejection (CME) into space — and it appears to be heading our way. The CME will likely sweep past Earth late Tuesday or (more likely) Wednesday and trigger geomagnetic storms. Sky watchers should prepare for Northern Lights during the nights ahead.

Ray VK4BLK, Yeppoon QLD, reports *... The Dx season has started; here is an extract from my log. 5/9 0343 W4CLM/MM S59 R59 (Grid BL54), 7/9 0026 K6LIG 57 57 DM12, 0049 KG6KH 55 55 DM12, 0055 KB6NAN 51 51, 8/9 0216 N6RV 539 559, 0730 KH6SX 559 559, 16/9 0134 XE2EED 54 52 DM12, 0934 JD1BKZ 539 519 Chichijima Island. 3/10 0138 N6XQ 54 54, 2243 K6LIG 55 55, 4/10 0131 K6QXY 549 539, 5/10 0127 N6XQ 56 55, 5/10 0155 K5SW 539 519 Grid EM25* Ray VK4BLK

On a slightly different note but of interest to those who look for 6m repeaters during summer, comes the following from Mike ZL3MJS. *The Christchurch 6m repeater is now officially on air, 53.850 MHz o/p, 52.850 i/p, into a 5/8th vertical, on its tower, about 120ft above the ground. It's*



PLL Digital Readout for 10 GHz ATV FM Transmitter



VK5SFA's @ GHz ATV antenna

running 18 watt into the antenna. It is sited at the Eryewell Fire Lookout Tower, in the Eryewell Forest, north west of Christchurch on the plains. Mike, ZL3MJS.

For the record two 6 m repeaters are operational in VK5, those being VK5RAD Crafers, 53.775 MHz (-1 MHz input) and VK5RSB Summertown 53.750 MHz (-1 MHz input). Both run around 25 watt from locations in the Mt Lofty ranges approximately 600 m ASL.

Microwave Primer Part Eighteen:

ATV & Microwaves.

This month we will cover ATV, in both UHF and Microwave bands. Microwave ATV activity, in particular, has been steadily rising over the last ten years for reasons much the same as narrowband activity ... the better availability of equipment and cheaper consumer Camcorders. This part will give a brief overview, the following two parts will dig deeper into equipment and operation.

Activity on UHF ATV, chiefly AM TV on 420 – 450 MHz and to a lesser extent 579 MHz and 1240 – 1300 MHz has been popular since the sixties. 576 MHz is no longer available for general Amateur use and is now restricted to the 3 remaining licensed Repeaters that use 576.25 MHz as an output subject to ABA requirements. The development of ATV transmitters followed along the lines of the AM transmitter development with similar technology albeit for video and higher frequencies.

Nearly all AM TV transmitters used in VK were (and still are) DSB Video, occupying a full 11 MHz of spectrum! The extra complexity and the spectral pressure have kept VSB transmitters a rarity. In Europe and other parts of the world, where only 430 – 440 MHz is available, the choice of VSB is mandatory.

In the seventies and eighties, ATV repeaters came into existence. The VK5RTV repeater was the first of what was to become typical, in 1977. Today it is still operational with 426.25 MHz input and 576.25 MHz output. Other repeaters use either in band 444.25 MHz or 1286.25 MHz outputs.

ATV repeaters have helped get many on ATV but suffer from one major drawback. Only one person can operate in a geographical area at one time tying up two channels. In the early days, when the ratio of those who had transmitting equipment was low compared to those with just receiving equipment, this wasn't too much of a problem. But if you have multiple groups wanting to operate at one time you soon run out of channel space in the 420-450 MHz band (only 4 VSB channels or 2 DSB channels). In one case, locally, two co located repeaters use both 420-450 MHz DSB channels plus one 579 MHz and 1286.25 MHz. This means simplex activity on the bottom two UHF bands is almost impossible anywhere in the Adelaide area!

So what do you do? Go higher of course! Overseas trends started moving towards FM TV on 1200 MHz and higher frequencies towards the late eighties. For some time, low power 10 GHz FM ATV activity had been possible with Gunnplexers (see earlier parts of the primer).

In VK several groups started 1250 MHz activity around 1991. Various designs came from both UK and DE magazines, but soon local adaptations evolved. At first all receivers were made up, but the abundance of ex satellite analog receivers now makes it even easier to get a receiver going. Transmitters were originally based on PLL designs locked to a crystal at 1/256 of the final frequency. After a while, it was found that the free running oscillators could be made acceptably stable, after all a couple of hundred kHz drift does not matter when you have a 18 MHz wide FM signal!

It wasn't long before it became evident that the extra power available from the same PA in FM duty vs. linear AM duty (+6db) more than compensated for the extra bandwidth (18 MHz vs. 11 MHz DSB) penalty! A Mitsubishi M57762 module can be coaxed to produce 23 watt of RF with 1 watt in, so long as you have enough heatsink to handle continuous operation! And with the availability of substantial power some surprising results have been obtained over short to medium paths with obstructions.

The progression to 2.3 GHz (before we lost the bottom 98 MHz) occurred around 1993 in VK5 at least. Again the availability of reasonably priced RF devices in amplifiers originally designed for narrowband use helped. 2 GHz transmitters simply used a doubler after the same generic 1.2 GHz design. This manner of RF generation has now been extended to 3.4 GHz (3X) 5.7 GHz (X5) and 10 GHz (X9).

With MDS being introduced around this same time, 10 watt power devices made it possible to obtain up to 25 watt on 2.4 GHz as well. The VK5RLZ 2 GHz ATV translator has operated almost continuously from 1994 running a pair of MGF0907 FET's at 20 watt, originally on 2372 MHz and now on 2415 MHz.

5 and 10 GHz ATV is now in regular operation in VK. As I speak, local ATV operators Steve VK5ASF and Barry VK5BQ have a regular almost 100% reliable path on 10 GHz ATV over 86 km QTHR to QTHR!

Next month, how and where to start.

In closing

For obvious reasons my Middle East trip has been "postponed" till next year, this column has gone in very late this time though!

Joe VK5UJ reports ... the pulsing interference on all three of Adelaide's 2 m repeaters, on the 8th and 9th of October 2001, has now been rectified thanks to the ACA successfully getting the operators of the offending transmitter to effect a fix. A spurious transmitter, installed at Greenhill SA, caused the QRM. Interference up to at least 7 Mhz away from it's fundamental was found up to 30 km away! I have done a quick write up of how we found the TX that was causing the problems and the quick ACA response. You can find it on my website at http://www.vk5uj.com/docs/2m_qrm_1.htm ... Joe VK5UJ

I'll leave you with this thought, ... "Isn't it amazing how much gets done to services and roads leading up to an election, maybe we should have elections every six months to keep things happening!"

73s David VK5KK

Repeater Link

Will McGhie VK6UU
21 Waterloo Cr Lesmurdie 6076
will2@iinet.net.au VK6UU@VK6BBR

Good News!

Following on last month's comments re the spiralling costs of repeater sites, is some good news from VK2. Negotiations have been able to reduce the asked for rent cost from thousands down to hundreds.

All those who tackled the cost problem should be well pleased with the results. Other repeater groups should contact their fellow repeater groups in VK2 for any advice they may require, if they are experiencing similar high rent costs for repeater sites.

Mobile Phone Coverage

During the month of September I spent several weeks in Victoria travelling up to the snow fields for a week of excellent skiing followed by touring around East Gippsland and Wilson's Promontory. No amateur radio equipment went with me but I did have a CDMA hand held phone throughout my travels. Knowing a bit about getting radio signals to handheld radios I was in constant amazement at just how well these CDMA phones work. Driving through dense forest, down in valleys with no visible sign of civilisation or radio towers, these hand held CDMA phones, with only their small pull up aerial, work with noise free signals. The coverage really is quiet extraordinary. With just the aerial on the phone inside the car, phone contact was available almost throughout my entire travels through central and southeast Victoria.

Sure there is lot of money and investment in radio sites to provide this coverage but it still amazes me at just how a few hundred milliwatt goes so far. The aerials on the mobile phone towers do have considerable gain and from what I have read on the Internet can have gains of around 17dB. CDMA phones are digital spread spectrum and as such have a noise free gain advantage over conventional analogue FM signals. Put all this together and your CDMA phone works in the most out of the way places. I have tried a magna base aerial on the car with considerable improvement over the already impressive coverage.

Laugh if you must at the mobile phone user, lost without his mobile phone, but it sure made rendezvous on the ski mountain with friends, after a couple of hours of skiing, for the much needed hot chocolate easy.

QSL Collection

Ken Matchett VK3TL

Your QSL Collection is a Winner!

The WIA's National QSL Collection (which belongs to all members of the WIA) has now achieved the ultimate! The last of the wanted DXCC Country QSLs, namely North Korea, arrived recently. A spare Martti Laine P51BH from this rare country was kindly, donated by DXCC champion Jim Smith VK9NS of Norfolk Island. The National QSL Collection now has at least one QSL card from every country in the DXCC listings from 1946, together with every deleted country since that year. The DXCC Collection is just one of the several individual collections such as the Thematic Collection, Pictorial, German DOKs, American County QSLs, Special Issue QSLs, Pre-War QSLs etc., making up the National QSL Collection, but it is a very important one. If you too can lend a hand to add to this Collection and save something for the future please contact the Hon. Curator, Ken Matchett VK3TL on (03) 9728 5350. It will be appreciated - after all, how long has it been since you have taken even a glance at your own QSL collection?

The WIA regrets to announce the recent passing of:-

J E Aldred L30240
G N (Geoff) Chapman VK2AIT
I N (Ivan) Thomas VK2NJ
P K (Peter) Bennie VK3KR
G E Strange VK3QS
W L Robb VK3YR
AR E (Ern) Nitschke VK5EN
R H (Harry) Atkinson VK6WZ

L Harvey Utber VK3AHU

With quiet courage, Harvey died from cancer on 3rd of May 2001.

Harvey received his education at Frankston P.S. and Melbourne Grammar School, and later attended the Marconi School of Wireless, where he qualified as ship's radio operator.

With his best friend, he decided to join the RAAF and in 1941, they went to S. Rhodesia to train as pilots under the EFTS (Empire Flying Training Scheme). When in the UK, Harvey was transferred to Spitfires. In 1943, his group was sent to Darwin and joined the 452 Squadron as first replacements. With characteristic modesty, Harvey reckoned that he did more damage to friendly machines than to the enemy's.

I first met Harvey when the Utber family home was at St. Kilda, and he was Lessee of the Golden Fleece service station in King St. Melbourne, a business the Utber's carried on for over 25 years. The "works" vehicle was (from memory) a Holden EH wagon. His daughters had playfully stencilled "Harvey" in bright colours upon the driver's door, where it remained.

His many interests included jazz and classical music, church and choral activities, Legacy, RSL, Probus, and the many and various aspects of amateur and vintage radio. As a keen Morse man, and supporter of the "Early-Bird" CW net, Harvey's excellent sending fist was a joy to hear. He once received a letter addressed to "the Morse Code man, Violet Town"- which greatly pleased him. In true amateur spirit, Harvey invariably offered real encouragement to persons wishing to improve their Morse skills.

Only about a week before his death, Harvey attended a regular meeting of his cherished Vintage Radio Club of North East Victoria, at which he was granted Life Membership. This event was one of the few things that I ever heard him boast about—he was so genuinely appreciative of the gift. Harvey's entries in that club's radio building competitions were seldom conventional. One crystal-set effort, which in appearance was no great beauty, having been hurriedly made simply in order to "have a go", actually went on to win a prize on account of its excellent sensitivity and selectivity. In another "mantle-set" competition, his model needed a pretty big mantelpiece because, in order to get a pleasing sound, he had used a 12" speaker! Of the many sets that Harvey lovingly restored, I particularly remember his HRO receiver project, which he had stripped down to bare metal chassis, then painstakingly re-built to look and work like new.

Harvey will be fondly remembered for his many qualities, which included beautiful manners, good humour, infectious enthusiasm, and a great sense of fair play. He leaves his wife Kath, daughters Carolin and Rosemerry, and grandchildren Adele, Macs, Ted and Miriam.

Drew Diamond, VK3XU (with the assistance of Bob Young and Rodney Champness of the Vintage Radio Club of N.E. Victoria)

Geoff Chapman VK2AIT

On Wednesday 19 September in tragic circumstances, Amateurs lost the services of Geoff Chapman VK2AIT.

Graduating from Sydney University's Engineering faculty, Geoff's career spanned dredging for gold in New Zealand; Open-cut mining at Yallourn; and service with an American Small ship unit in New Guinea during WW2.

He was Manager of Remington's electric shaver operations in America and closed his business career with responsibility for site preparation for computer mainframe installations in Australia for Sperry and later Univac.

Geoff was a perfectionist. His workshop skills with lathe and hand tools were legendary. He pushed the frontiers of every field of interest. With his friends Clay K6AEP (at IBM Silicon Valley) and Doug VK8KK (now VK3UM but then at Radio Australia) he helped move slow scan television out of the flying spot scanner age.

Then came the challenge of self-training on Motorola 6800 series computers, followed by participation in every phase of amateur satellite activity. His encyclopedic knowledge of software, hardware and imaging was shared with overseas amateurs on the Internet and a group of VKs with whom he had almost daily contact on HF for more than thirty years.

Geoff's passion was to know the strengths and weaknesses of new equipment and software. Competent in many programming languages he attracted hard questions. Concise logical answers were his forte, Beta testing of software another. Never one to force his views on others, his quiet manner, technical competence and seemingly unruffled patience with those less knowledgeable, will be sorely missed.

Vale Geoff. VK2AIT SK.

C G Harvey VK1AU
16 Leane St, Hughes A.C.T 2605.
Ph. (02) 6281 3607

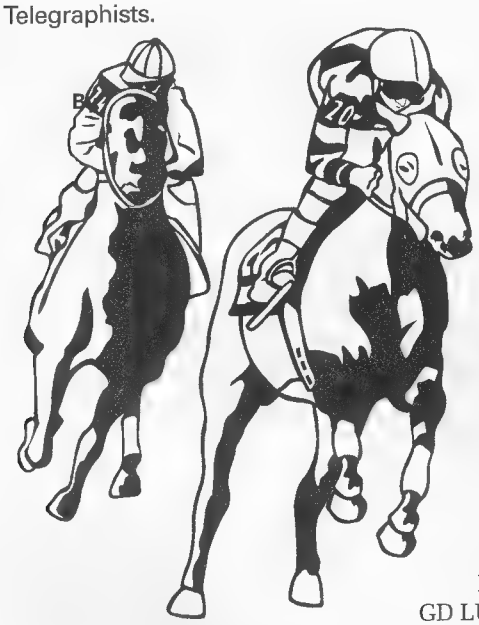
C W and the Horses

submitted by David Pilley VK2AYD who thinks it came from the Morsecodians

As an avid CW operator I was very interested in the uses telegraphy has taken over the past one hundred years. In early Australia the only means of communication was by telegraphy and I know many readers were part of this evolution and served the then General Post Office as Telegraphists.

Being a "new" Australian, I was fascinated to learn how "out-side broadcasts" were performed from the race courses, where Telegraphists transmitted the race event to the broadcast station where an announcer, using studio props, turned the broadcast "live".

I have no idea from where the following ode/poem originated, but I thought it interesting just how Telegraphists transmitted the message and the abbreviations used to speed up the transmitting time. It's a cypher within itself. Perhaps "Spru" Spuham is still around and can tell more. Perhaps you were one of these Telegraphists and can also tell us a real life story?



Coming Round the Bend

"Spru" Spruhan

I well remember Charlie Teede,
Who used to word the races;
No need, indeed, to ask the speed,
He'd pace it with the pacers.
Lord help the man who "broke" him once
Or questioned his "creations";
On him a flood of scorn was turned
The atmosphere with brimstone burned,
And Pitman, green with envy, squirmed
At his abbreviations...
THE FIELED GOT WL AWA TO TI
& AS TY SETTLED DWN
THE SCHICER 1ST T BK TE LI
WAS FLWD BI JO BROWN.
IN CLOSE PROXIM WS TIRED TIM
TN CME ARBTRATN,
BHND TE BUNCH WS CNTR LUNCH
GD LUCK & HI TAXATN.
TY WHISSED ALNG (and so did Charles)
WTOUT TE LEAST CESSATN.
C R T B TE TOPWT JUMPED
& GOT ON TRMS WI SHICR,
WO TN & TRE HS BUNDL DUMPD
WN LABLD HM A TWICER.
I scrambled after Charlie
Like a trailer round the bend
Then gave OK – but queried:
C R T B U SEND.

NOW WHAT IS THAT IN AID OF?
ENLARGE A BIT MY FRIEND.
The sounder nearly hit the roof
As Charlie scorched the line.
U ORT T B ON TE RABTPROOF
OR UP AT DOODLEKINE.
CHASIN PODDIES RND TE YD
SHD B UR CHF PASTIME.
T TNK U CDNT WRK IT OUT
IT NRLY MKES ME SIK
ANI OLE GIN OR ROUSABT
CD WRITE IT W A STICK.

FANCI A MAN WHO CALLS HMSLF
A TGST ASKG TT
A RECORD O S VACUUM
IS LOCATED NEATH UR HAT
D U WANT IT IN OILS SI LAMBERT?
OR CARVD ON A MARBL STONE?
OLE WINJA MORTILL CD TKE IT
& UD NEVER HR A MOAN,
NOT SPELT OUT LI IVE DUN FR U
BT CUT DWN TO TE BONE
WL I MST SA ITS TE BST DSPLA
OF IGNRCE IVE HRD
O ALL TE SQUTRS IN W A
UR CRTNLI TE BIRD.
& ANI HRSH REMKS IVE MIST
TY ALL ON B INFERD
C R T B, ITS KNOWN BY ROTE
WT WD U HA ME SND?
ITS CMG AND TE BND, U GOAT
COMING ROUND THE BEND!

The Australian Amateur Radio FAQ

VK's online amateur reference for the net generation

Once people are aware of amateur radio's existence where do they go to find out more? If they're lucky, someone might put them in touch with a radio club. If they're not, they might glean some snippets from a 20-year old ARRL handbook at a local library.

Peter Parker VK3YE
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E-mail: parkerp@alphalink.com.au

Neither option is likely to present the newcomer with the full range of activities in which today's amateurs are now involved. Amateur radio's future vitality is too important to be left to disparate websites or shelves of dog-eared books that in many cases contain information outdated or irrelevant for Australian conditions.

Enter the Australian Amateur Radio Frequently Asked Questions (or FAQ)! This online reference allows anyone with internet access to find out about all facets of amateur radio activity in Australia. The FAQ, compiled by amateurs expert in their field, is updated regularly. Information on study, licensing operating, special interests and sources of information are available on the FAQ. However it is written in such a way that it does not duplicate other sites that cover particular facets of amateur radio in greater detail.

This article outlines the history and content of this most useful resource for the Australian amateur. If you wish to explore it for yourself, please refer to the URL at the end of the article.

FAQ History

Though the FAQ is now hosted on a website, its formation predates the widespread adoption of the world wide web. The FAQ was founded by Mark Cheeseman VK2XGK in 1993.

Mark recollects that he mistakenly asked on the aus.radio group (now renamed aus.radio.amateur.misc) if it had a frequently asked question (or FAQ) list. The idea of having an FAQ list was to provide a source of answers to common questions so that newcomers would not be cluttering the group with the same questions that had been asked a short time before. It transpired that aus.radio did not have an FAQ, and it was suggested that Mark write one!

Mark wrote the first version himself, with help from others regarding factual details and the like. As well as being posted to aus.radio each month, it was also distributed via the then popular FidoNet telephone bulletin board network. At the time Mark was running a telephone BBS and was able to forward messages to internet news and mail. The FAQ was never distributed via packet radio as its main purpose was to raise interest in amateur radio amongst non-amateurs.

By 1995 the FAQ had grown to 5000 words. It included an outline of what amateur radio is, the licence system, various facets of amateur radio, radio-oriented BBS directory and WIA information. Because the FAQ was initially pitched at computer enthusiasts (these being virtually the only people who used telephone BBSs and email at the time) detailed information on packet radio was also provided.

That year the FAQ's stewardship was transferred to Andrew Davis VK1DA, and it underwent further revision and expansion to cover more facets of amateur radio. In 1996 it had grown so much that the monthly postings on aus.radio.amateur.misc were replaced with the current web-based format on Andrew's web page.

This arrangement has continued to this day, with the FAQ receiving a major update and expansion in early 2001. The changes included even more detail for beginners, addition of new sections on emerging aspects of amateur radio and more internet links to special-interest pages.

So that's pretty much where the FAQ stands today. Those who contributed to its development over the years include Mark Cheeseman VK2XGK, Carl Makin VK1KCM, Michael Butler, Dave Horsfall VK2KFU, Rod Gamble VK2DAY, Dean Davidson VK2ZID, Paul W. Schleck K3FU, Leigh Baker VK3TP, Doug Rickard VK4ZDR, Andrew Davis VK1DA and Peter Parker VK3YE.

FAQ Contents

The FAQ is divided into several key sections. These are as follows:

- General
- Licences
- Operating
- Special Interests
- Associations, Clubs Periodicals and Information
- Equipment
- Software
- FAQ administration

The general section explains what the FAQ is about and provided an overview of amateur radio. It compares it with CB and explains what can and cannot be done with amateur radio. *Licences* introduces the reader to licence categories, exams, certificates and reciprocal licensing. The next section, on operating covers the basics of getting on air. The largest part of the FAQ is devoted to special interests. DX hunting, awards, contests, digital modes, mobile operating, VHF SSB and ATV are a few of the special interests covered in this section. The Clubs section introduces the reader to the WIA, news bulletins, available magazines and internet resources for the amateur. The remaining sections cover equipment and software availability and a revision history of the FAQ.

Conclusion

The Australian Amateur Radio FAQ has become a leading source of online information about Australian amateur radio activity. It is an education for aspiring and already-licensed amateurs alike. Point your browser to http://www.ozemail.com.au/~andrewd/hamradio/hamfaq.html and discover what it offers. Bookmark it. If you have a website, make a link to the FAQ from your page, so that your visitors can easily find out more about amateur radio.

Acknowledgements

The author wishes to thank Mark Cheeseman VK2XGK and Andrew Davis VK1DA for assistance rendered during research for this article.

HF Predictions

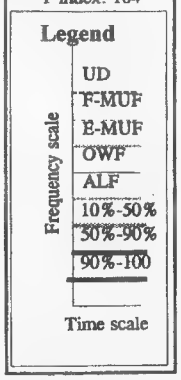
by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

November 2001
T index: 104



Adelaide-Capetown 30
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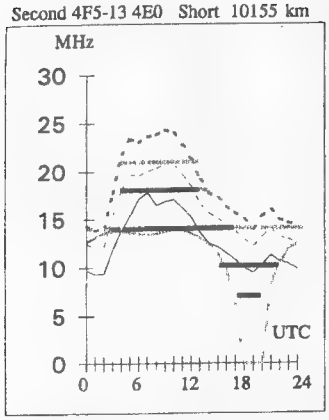
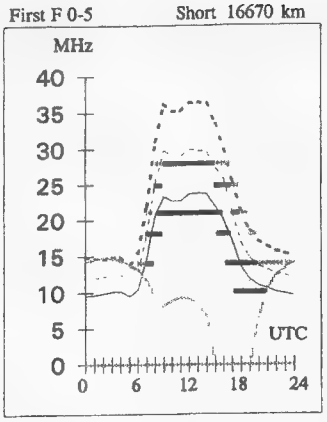
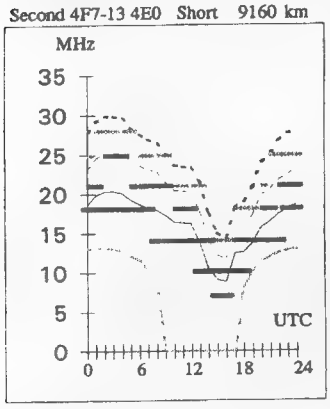


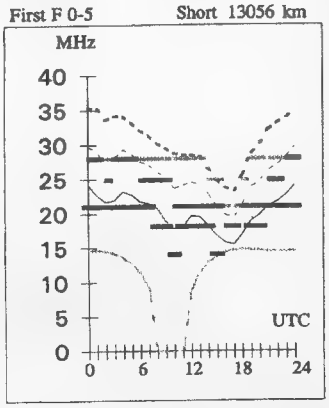
Brisbane-Dublin 335
First F 0-5 Short 16670 km



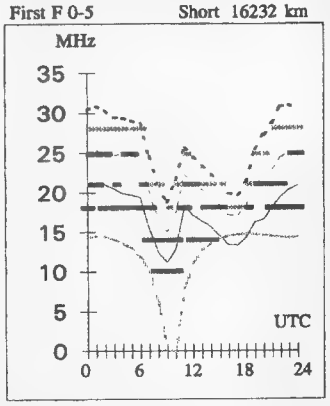
Adelaide-Honolulu 57
Second 4F7-13 4E0 Short 9160 km



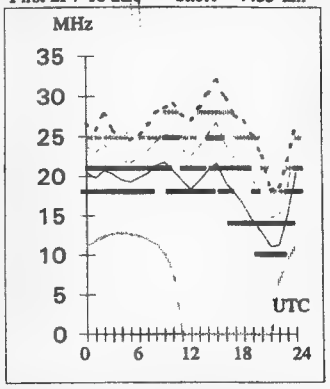
Brisbane-Lima 122
First F 0-5 Short 13056 km



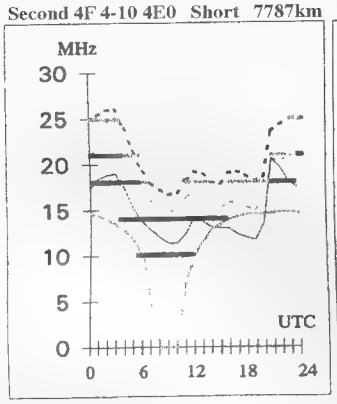
Canberra-Barbados 123
First F 0-5 Short 16232 km



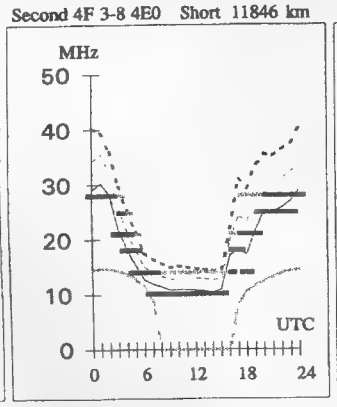
Darwin-Bangkok 310
First 2F7-18 2E0 Short 4435 km



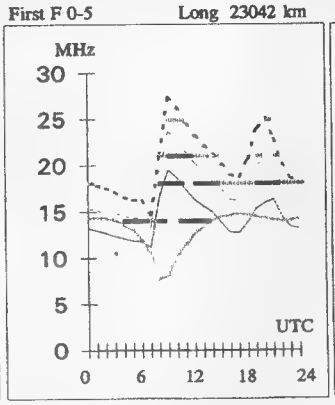
Adelaide-Osaka 246
Second 4F 4-10 4E0 Short 7787km



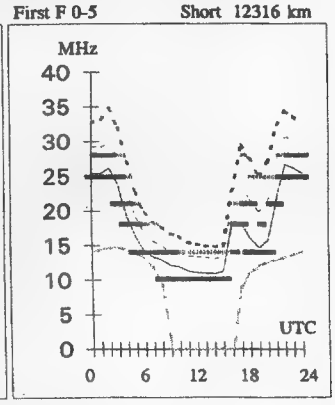
Brisbane-Seattle 44
Second 4F 3-8 4E0 Short 11846 km



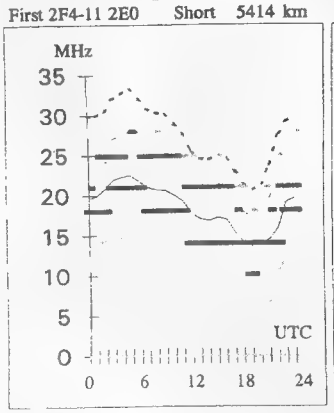
Canberra-London 136
First F 0-5 Long 23042 km



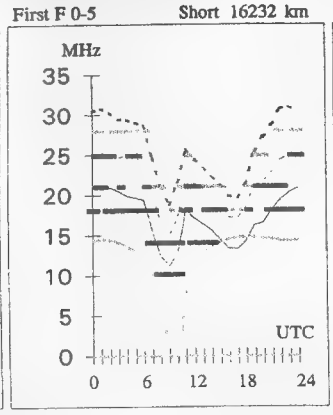
Darwin-San Francisco 54
First F 0-5 Short 12316 km



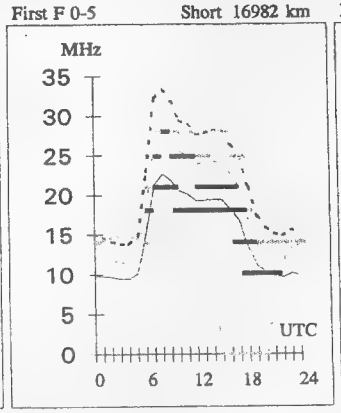
Adelaide-Singapore 311
First 2F4-11 2E0 Short 5414 km



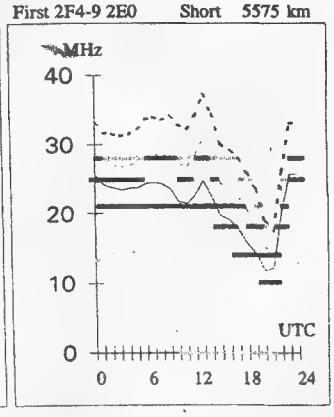
Brisbane-Barbados 123
First F 0-5 Short 16232 km



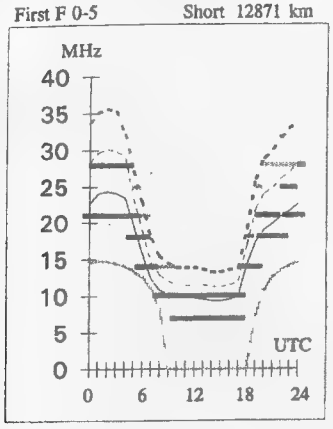
Canberra-London 316
First F 0-5 Short 16982 km



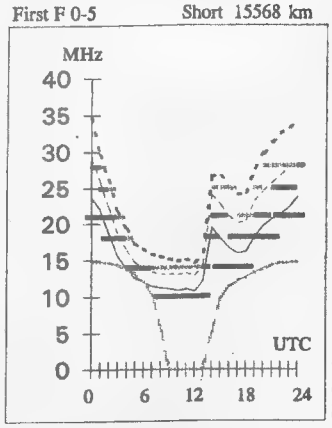
Darwin-Seoul 356
First 2F4-9 2E0 Short 5575 km



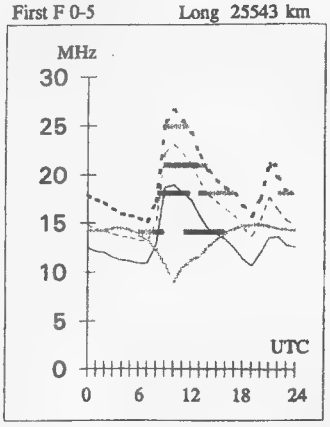
Hobart-Anchorage 28
First F 0-5 Short 12871 km



Melbourne-Chicago 67
First F 0-5 Short 15568 km



Perth-London 133
First F 0-5 Long 25543 km



Sydney-Invercargil 138
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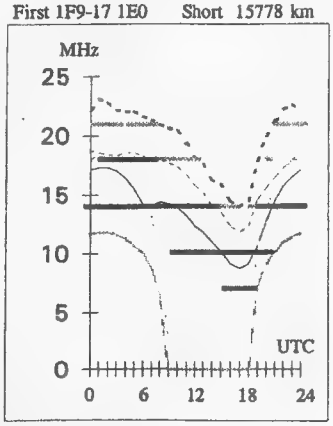
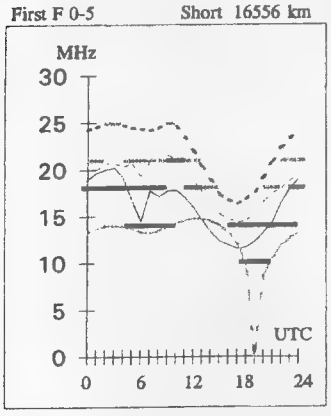


Hobart-Dakar 209
First F 0-5 Short 16556 km



Melbourne-Moscow 316
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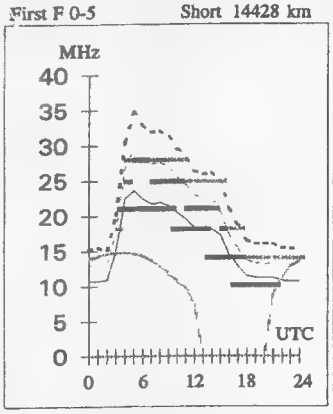

Perth-London 313
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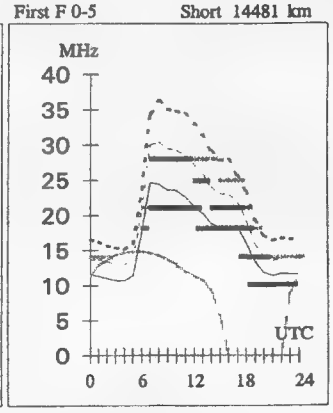

Sydney-New York 58
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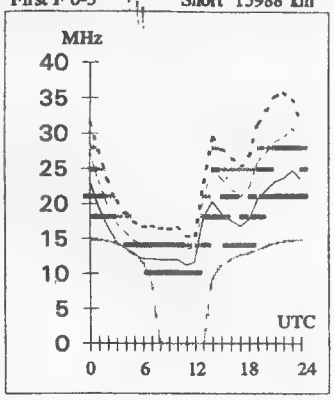
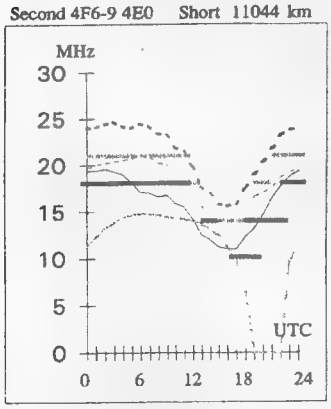
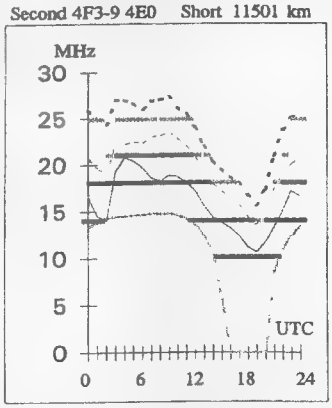


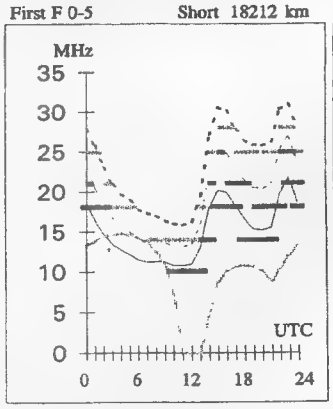
Hobart-Montevideo 161
Second 4F6-9 4E0 Short 11044 km



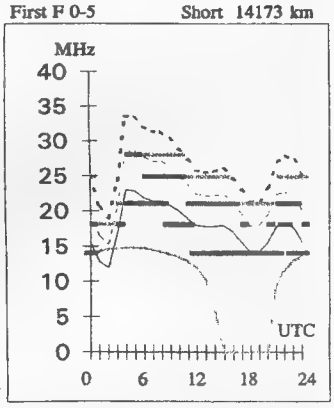
Melbourne-Nairobi 258
Second 4F3-9 4E0 Short 11501 km



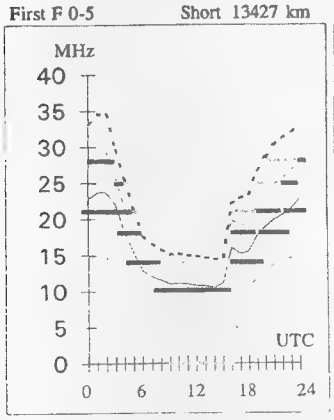
Perth-Ottawa 30
First F 0-5 Short 18212 km



Sydney-Tel Aviv 287
First F 0-5 Short 14173 km



Hobart-Vancouver 49
First F 0-5 Short 13427 km



Melbourne-Santiago 150
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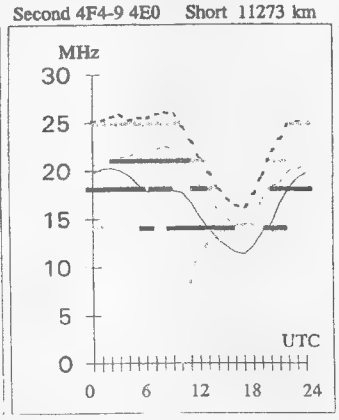
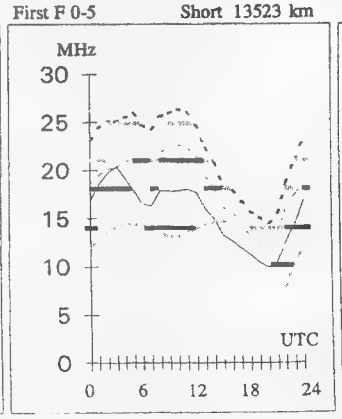
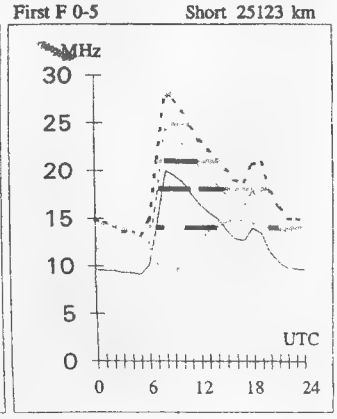


Perth-Rio de Janeiro 203
First F 0-5 Short 13523 km



Sydney-St Petersburg 143
First F 0-5 Short 25123 km



HAMADS

- Hamads may be submitted by email or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: *newsletters@ozemail.com.au* **Fax:** *03 9756 7031*
Postal: *Newsletters Unlimited, PO Box 431, Monbulk Vic 3793*

Please send your Hamad by ONE method only (email preferred)

FOR SALE ACT

• KENWOOD TS-430 all filters FM board checked by Kenwood $500. TS-680 HF 6 m checked by Kenwood $700. TS-440 $1050. TS-50 $1150. TS-751 2 m all mode $450. ICOM 3200 2 m 70 cm FM $300. MB-430 mounting bracket $20. All with handbooks. Freight paid in VK. Glen VK1GL. Phone 02 6254 8002

FOR SALE NSW

• DUMMY LOADS 50 ohm 25 W (conservative). Good to 1 GHz ex Telstra $20. Posted Goulburn Amateur Radio Society. David VK2BDT. Phone 02 4821 5036.

• OSCILLOSCOPE BWD539C two channel 20 MHz serial no 34926. Manual (includes schematic) and X10 probes (qty 2) included $100.Alex VK2LB, QTHR. Phone 02 9808 1031, alexford@ozemail.com.au

• Deceased Estate: KENWOOD TS-130S, with manual, microphone and very well made 20 amp power supply (metered, over voltage protection), $450. KENWOOD AT-250 AUTOMATIC ANTENNA TUNER, $200. 2 METRE HANDHELD ICOM IC-2GAT with battery and charger, $150. TET DX-433 DX TRI-BAND ANTENNA, $200. All items in excellent condition. VK2BMZ. Phone 02 9869 2498.

• TINY 2 Mk 2 TNC plus PacComm 9600 baud module with manual, $150 the lot. Ron VK2WB, QTHR. Phone 02 4232 1794

• ANT HUSTLER 5BTV HF TRAP VERT (unused) $400; HUSTLER 90-MTK 30m kit for 5BTV (unused) $90; ICOM IC-735 HF Tcvr $2000; ICOM 20 amp PS-55 $400; OSKERBLOCK SWR-200 $50; CDE ANT. ROTOR $10; 100 m COAX CABLE DSE RG58CU 50 ohm (unused) $90;100 m CABLE H/D 26/030 red/blk (unused) $100. Cyril formerly VK2ACQ Phone 02 97014312 (leave message if unattended).

WANTED NSW

• MULTI BAND HIGH FREQUENCY VERTICAL ANTENNA for mobile use only. Preferably remote tuned type but any type considered. David VK2IX, QTHR. Phone 02 4751 6124

• KENWOOD R-820 COMMUNICATIONS RECEIVER plus operating manual. Contact John VK2TH, QTHR. Phone 02 6925 8627

• TWO MOTOROLA MIXERS IC1496/1596 or FAIRCHILD 796AC to complete a project begun 25 years ago. Vince VK2ALZ, QTHR. Phone 02 6947 2198

• SERVICE MANUAL OR SCHEMATIC FOR REALISTIC PRO-2035 SCANNER. Richard VK2SKY, QTHR.Phone (0413) 000 842 or richardm@zeta.org.au

FOR SALE VIC

• MAST WIND-UP SELF-STANDING for removal. VK3BLR, QTHR. Phone 03 9874 3583

• YAESU VX-5R 50/144/430 MHz 5 watt FM H-held Tcvr. E.C. $525. YAESU FT-2500, 2 metre 50 watt FM Tcvr Rx 130-180 MHz. Scans. New in box. $425. Len VK3BMY Phone 03 5862 3116

• Deceased Estate. ICOM HF rig IC-751A with PS-30 power supply $980. YAESU FT-101 HF rig $300. LEADER LDM-810 GRID-DIP METER $80. WELZ DUMMY LOAD 200 W or 1kW $80. LINEAR POWER AMPLIFIER 400 W (with spare tubes) price negotiable. CVS450 UHF POWER AMPLIFIER $85. MFJ-9490 VERSA TUNER $100. Manuals. Apply VK3DFE, QTHR. Phone 03 9807 3995

• KENWOOD TS-711A 2m ALL MODE TRANSCEIVER, VGC with operating manual, hand mike and service manual $600 ONO. ICOM IC-R7100 VHF/UHF RECEIVER, like new condition with original carton and operating manual etc. $1400 ONO. Damien VK3RX. Phone 03 5427 3121

WANTED VIC

• YAESU FC700 ANTENNA TUNER. Ray VK3RD, QTHR. Phone 03 9726 9222

• POWER SUPPLY BOXES in any condition for WIRELESS SET No.11 and any plugs/leads to suit these. For the radio I need the Tx tank coil and switch assembly and the two front panel bakelite jack covers and any original jacks to suit. Clem, VK3CYD. Phone 03 5126 2064 or clem@dcsi.net.au

FOR SALE QLD

• Shack clearance of items I no longer need or use. KENWOOD HEAVY DUTY PS-32, 22 amp power supply $250. HIDAKA VS-33 TRIBAND 10-15-20 metre HF trapped Yagi antenna, made in Japan, complete with balun $250. Brand new in factory sealed carton KENWOOD PS-52 POWER SUPPLY $450. New SHURE 404C HAND MICROPHONE in box, same insert as Shure 444D desk microphone with 8 pin plug wired for Kenwood $110. AWA UHF FM REPEATER Model FM-702D works very well $250. Two KENWOOD DM-81 DIP METERS complete $100 each. YAESU YD-184 dynamic golf ball style gooseneck selectable hi or lo impedance $55. CPI (USA) AMPLIFIED HAND HELD DYNAMIC MICROPHONE (USA) $50. John Abbott VK4SKY, QTHR. Phone 0417 410 503, email japat5@bigpond.com, PO Box 1166, Coolangatta 4225, Queensland.

WANTED QLD

• WWII No 19 set also Type A Mark III SUITCASE TRANSMITTER/RECEIVER and Type 3 Mark II (B2) TxRx. Ray VK4FH. Phone 07 3299 3819. Fax 07 3299 3821. PO Box 5263, Daisy Hill Qld 4127

• BUTTERNUT HF6V-X VERTICAL ANTENNA. Erection and tuning instructions at my cost. VK4PJ, QTHR. phbrown@powerup.com.au

FOR SALE WA

• PHILIPS FM-92, 2 m mods $100, SOLID STATE 70 cm LINEAR AMP, VHF Engineering BLE 10/80, 10 W in 80 W out $220, SOTA 70 cm TRANSVERTER, 432-436 MHz to 10 m IF, 10 W output $180, VK5EME AO40 S-BAND DOWN CONVERTER, 2 m IF $120. Phil VK6APH, QTHR. Phone 08 9245 2973, philh@start.com.au

WANTED WA

• AZIMUTH AND ELEVATION ROTATORS. Phil VK6APH, QTHR. Phone 08 9245 2973, philh@start.com.au

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

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FOR SALE ELECTRONIC VALVES

If you are looking for valves you can contact, Gamini Liyadipitiya at email: gamini@ee.unsw.edu.au Small negotiated fee — first come first served.

AMIDON FERROMAGNETIC CORES:

For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please. 14 Boanyo Ave Kiama). www.cyberelectric.net.au/~rjandusimports.

Agencies at: Active Electronics Tas, Truscotts Electronic World, Melbourne and Mildura: Tower Communications, Perth: Haven Electronics, Nowra

http://www.hamsearch.com
a not-for-profit site that is a search engine for hams

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for **less than 25 but more than ten years**, you are invited to become an **Associate Member** of the RAOTC.

In either case a $2.50 joining fee plus $8.00 for one year or $15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

RAOTC,
3/237 Bluff Road
Sandringham VIC 3191

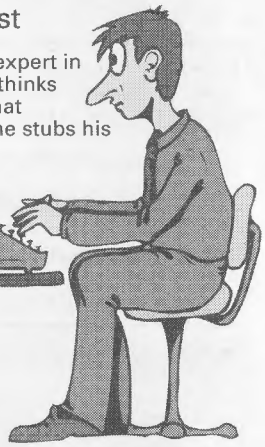
or call Arthur VK3VQ on **03 9598 4262** or Allan VK3AMD on **03 9570 4610**, for an application form.

Email your hamad

Then we just cut and paste.
You proof it, you retain control.

PLEASE BE KIND TO OSCAR

Meet Mr Oscar Goldenboy, our Hamad typist



Oscar is not an expert in your field — he thinks Megahertz is what happens when he stubs his toe on a rock.

To help Oscar, please write your hamad legibly, using both capitals and lower case, and use legitimate abbreviations.

This will reduce the chance of errors being published, which incoveniences everyone.

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Over to You

Did Tesla really invent radio?

THIS LETTER WAS SPARKED (?) off by John Wagner's article in April AR, a reprint from an earlier publication. There appears to be quite a few people who, like Wagner, consider Tesla to be some kind of universal genius. Maybe he was, but the claim that he invented radio is dubious. Tesla's claim, supported by an American Supreme Court decision in the 1930s, centres around a lecture Tesla delivered before the Franklin Institute in 1893. Other than a demonstration of power transfer from one tuned circuit to another across several feet on a bench, and then by using quite high power, the only reference in that lecture that could possibly be taken as related to radio comes after that demonstration, to quote from his own lecture notes: "I would say a few words on a subject which constantly fills my thoughts and which concerns the welfare of all. I mean the transmission of intelligible signals or even power to any distance without using wires." He goes on to say "I no longer look upon this plan of energy or intelligence transmission as a mere theoretical possibility, but as a serious problem in electrical engineering, which must be carried out some day." This does not sound like a person who has fully thought out the way of making a working system of radio communication!

Of other names that have been put forward as the "inventor" of radio which include Mahlon Loomis (who claimed to have transmitted messages over a distance of 18 miles as early as 1866), Nat Stubblefield, and even Ernest Rutherford, Oliver Lodge is my pick. In 1894, Lodge, using a Herzian oscillator, tuned circuits, a Branly coherer and a Muirhead morse printer, gave a demonstration in an Oxford lecture by transmitting the alphabet across a space of about 60 yards and through several brick walls. Lodge, however, was a busy physicist uninterested in the exploitation of the radio idea. He left that to Marconi, whose initial transmissions amounted to broadband noise, possibly around 2 MHz and 900 MHz.

One problem for those who argue for one another of the names mentioned above is that "inventor" can mean anything from having an idea or speculation, to being the first to produce a successful working device. Tesla's 1983 remarks seem only speculative at best. There is no evidence that, in his 1893 lecture/demonstration, there was any attempt to transmit any sort of signal that carried intelligence. Nor, apparently, did he have such an immediate possibility in mind. Therefore he cannot be accorded the honour of being the inventor of radio, in spite of a legal judgement in his favour.

Rex Newsome, VK4LR ,
58 Prospect Terrace, St Lucia, QLD 4067
email: lnew@bigpond.net.au

Countdown to Commonwealth Games

FROM THE 25 JULY 2001 until 5 August 2002, 9 special event stations will be operating from the Manchester area of England. The special event will mark the 12 month count down to the start of the 17th Commonwealth games.

There is an award set up for this event and an internet gateway is being provided so that the VHF operators can work the award also. HF modes of operation will be CW, PSK31, SSTV, AMTOR, RTTY and PHONE, A list of all stations and further details are available from http:www.geocities.com/gbgames2002.

We will look forward to hearing from VK.

Kev G0TOG

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Over to You

Response to 'Hams, exams and Tim Tams'

IN RESPONSE TO Ian Jackson's letter in October AR I would like to make the following comments.

I would agree we should make it easier for would be radio enthusiasts to get on the air. We cannot afford to be elitist and Morse code is only one mode of communication.

I would definitely agree we need publicity, although we should be wary of the "full in the face" variety as it tends to have the opposite effect. Many people are unaware of the existence of Amateur radio as a hobby and, those who do know about it, tend to see it mostly as an extension of CB. Demonstrations to schools, Scout and Guide groups, in shopping centres etc. would achieve some positive publicity. I have heard that VK6 is considering a vehicle fitted out for this purpose, but I would like to see an emphasis on the aspects of Amateur Radio that set it apart from CB.

Graham Dixon G8CGK tells me narrowband television tends to attract a lot of attention. I could see NBTV as the basis for a challenging project not beyond the capabilities of average high school students or Scout or Guide groups with appropriate support. This would be a bandwidth suitable for HF or recording on an audiocassette recorder.

As well as NBTV there are three other video modes, eleven digital modes and space communication. All used appropriately in our bands from 1.8MHz to 250GHz.

Although nostalgia can be part of Amateur Radio, the days of the 807 are over and focusing on that type of technology will not attract new members. The upside is that new technology is safer, affordable and a lot easier to work with. It is possible for a novice to get on the air with a direct conversion receiver, built around a 602 chip or similar device.

It is easier now for people who wish to be constructors and experimenters, however, people can loose interest if they find it hard to obtain parts or if they are not too sure how to do things. This is where clubs can perform an active role in addition to being places to meet and chat. I think it would be beneficial to our hobby if the clubs were to perform a more active support role. As well as holding AOCP classes they can be sources of ongoing education and problem solving. PC based courses and data banks could be used. Clubs can be sources of parts and how to use them eg. SMD.

Some clubs could have test and fabrication facilities; not everyone these days has room for a workshop. So this could help membership and encourage experimentation.

Well that "my two cents worth". Who else would like to have a say?

James Robertson VK5ASE
PO Box 110, Flagstaff Hill, S.A. 5159

I FOUND IAN JACKSON'S letter under this heading (AR Oct2001) interesting and constructive and I offer the following comments as well as offering support in achieving some of his objectives.

Idea One. Ian proposes ways to get people on air without passing any examination for technical knowledge. Bad idea Ian. If you want to get people on air without testing technical knowledge get them into CB radio which can be very interesting and indeed is a path many amateur radio people have followed. Amateur radio is not a technical knowledge free zone and we are supposed to be people who show evidence that we understand why and how our radios do or do not work.

Idea Two. Get some real publicity going says Ian. Great, lets get going. The WIA family unfortunately lacks corporate memory on such things but over the years many have asked for publicity material including posters for publicising amateur radio in schools, clubs, libraries etc but despite the good intentions of various office holders the need gets forgotten. So lets all put our shoulders to the wheel and support this initiative and get some professional publicity about our hobby into the market place.

Idea Three. Simplify the exam procedure by combining the novice and full call exams with two pass marks, one for novice and the other for full call. An excellent idea Ian and obviously you are a brilliant chap because I had never thought of that solution. So, again lets all get behind Ian and push to achieve this objective. There are some obvious difficulties with the proposal but they are minor compared to the benefits to be obtained from implementing Ian's approach

Well Mr Editor, a very interesting set of ideas from Ian Jackson VK3BUF and you are to be complimented on giving him the space to get his ideas out into the open. I for one intend to spread support for his ideas numbers two and three. If there is anything I can do to help, I would be glad to put some effort into it.

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Note 1 Views expressed in letters are those of the authors and do not necessarly represent the policy of the WIA.
2. Some of the letters may be shortened to allow more letters to be published.

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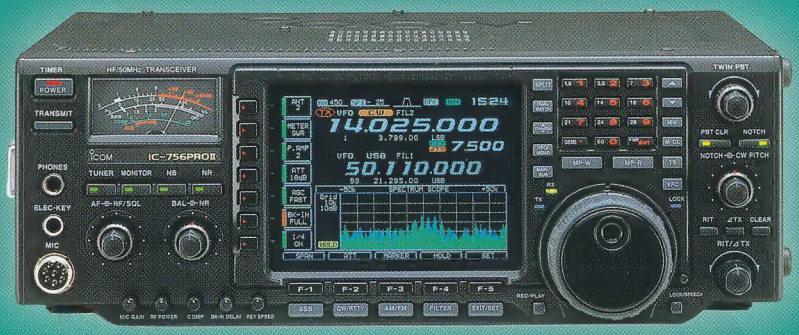

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